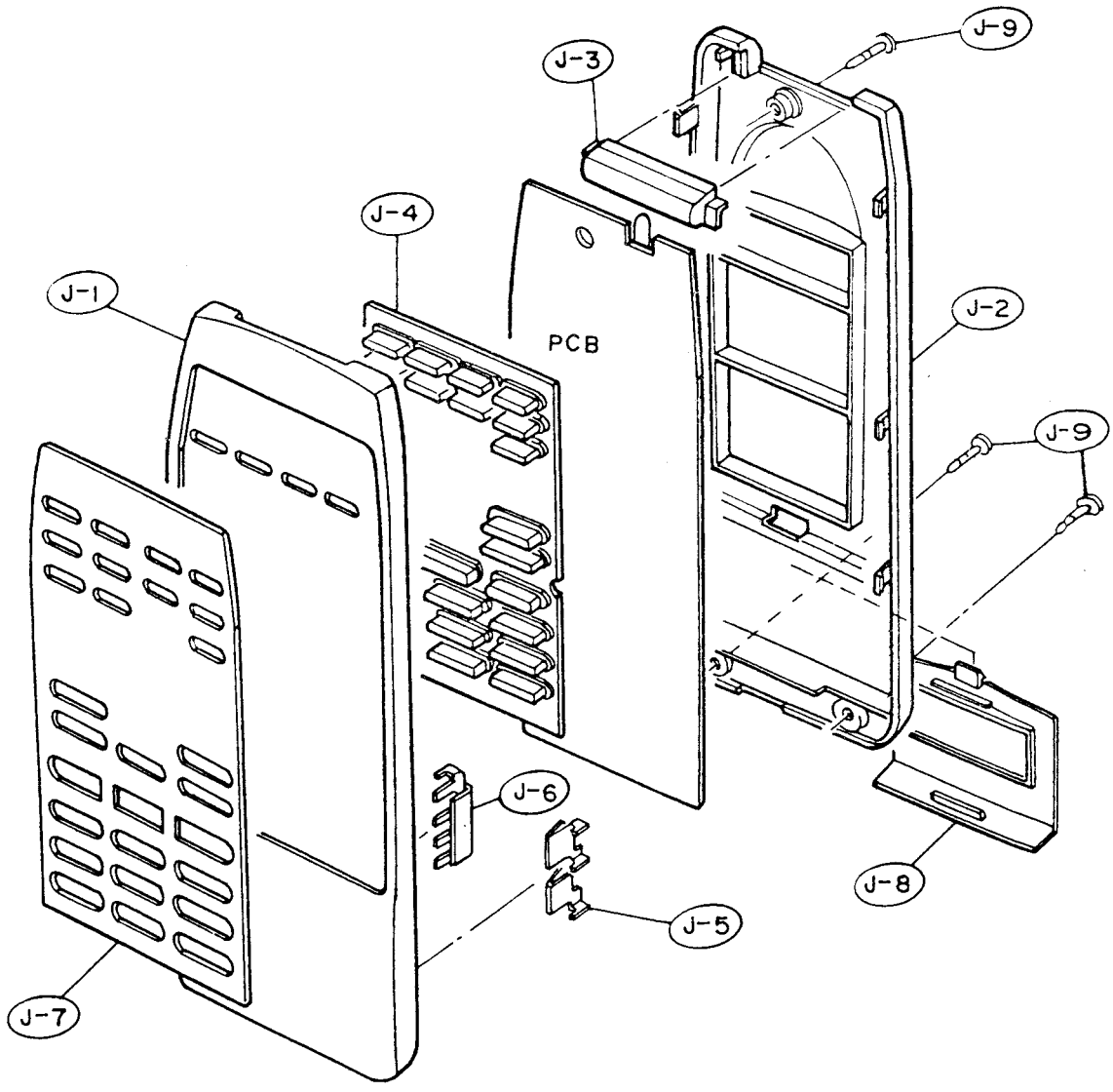
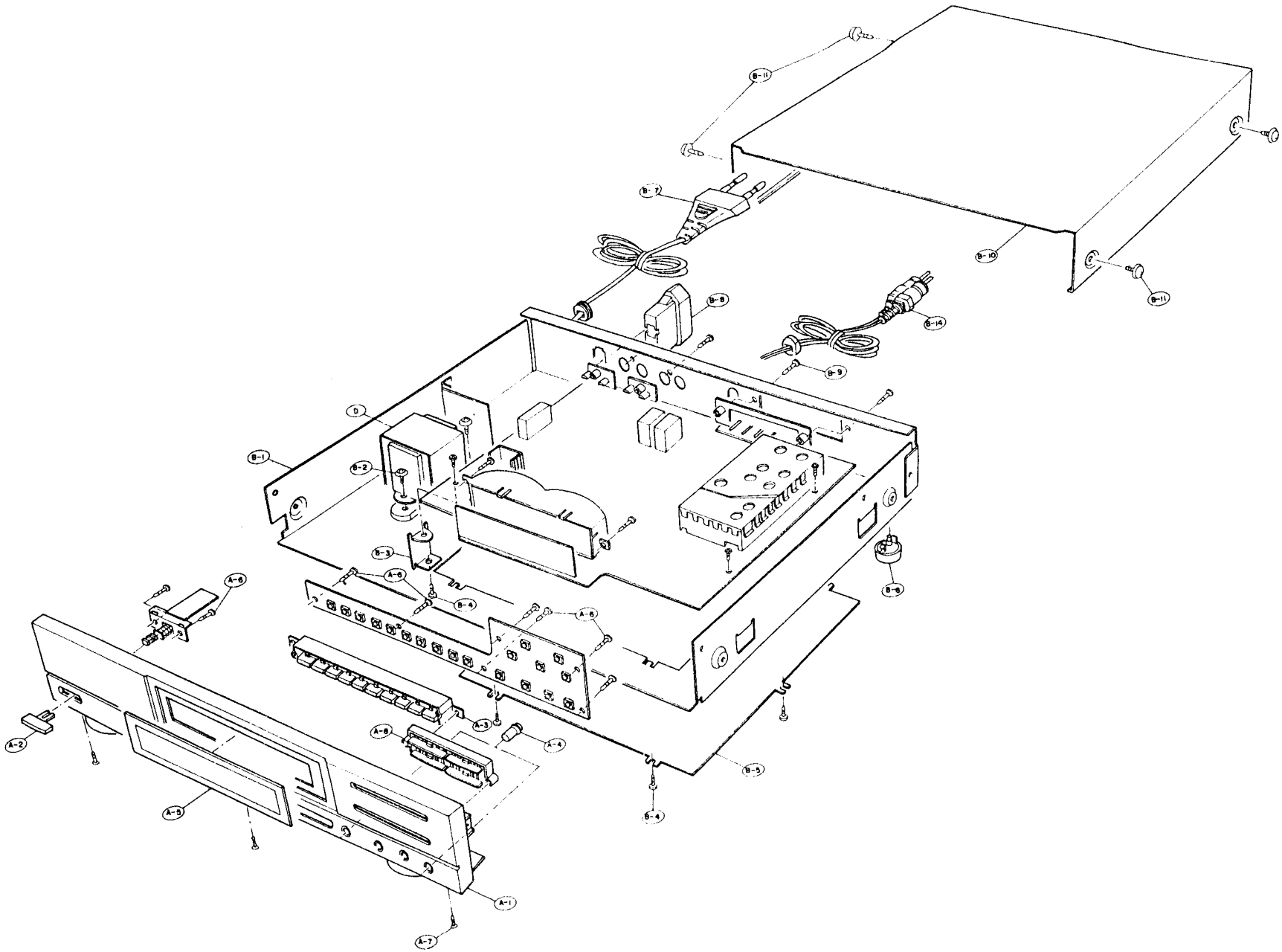
Technischer Kundendienst

037.7192

BESTELL-NR.	0377192
GERAETEBEZEICHNUNG	UNIV.-BAUSTEIN-SET
WARENGATTUNG	653
AUSFUEHRUNGS-NR.	001
GERAETEBESCHREIBUNG	
PRIVILEG	VTCFCD4394
LIEFERANTEN-NR.	201888
PREIS	1598.00
KATALOG	894
GARANTIEZEIT	6
KD-SEKTOR	R
HEIM/BRINGE	WERKSTATT
BETREUUNG	EIGEN
KOSTENTRAEGER	EIGEN
REPARATURFAEHIG	JA



6700-451/1184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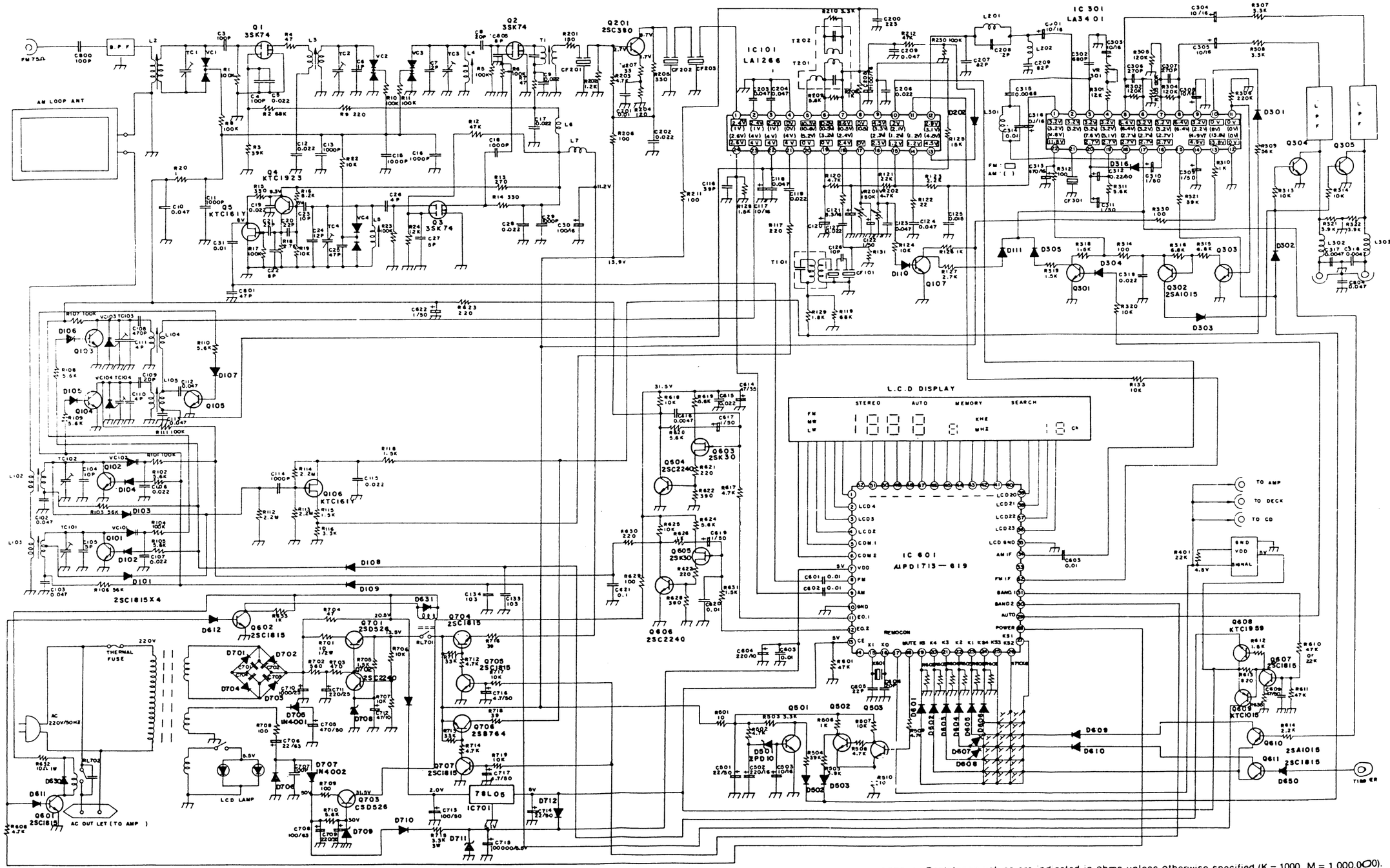
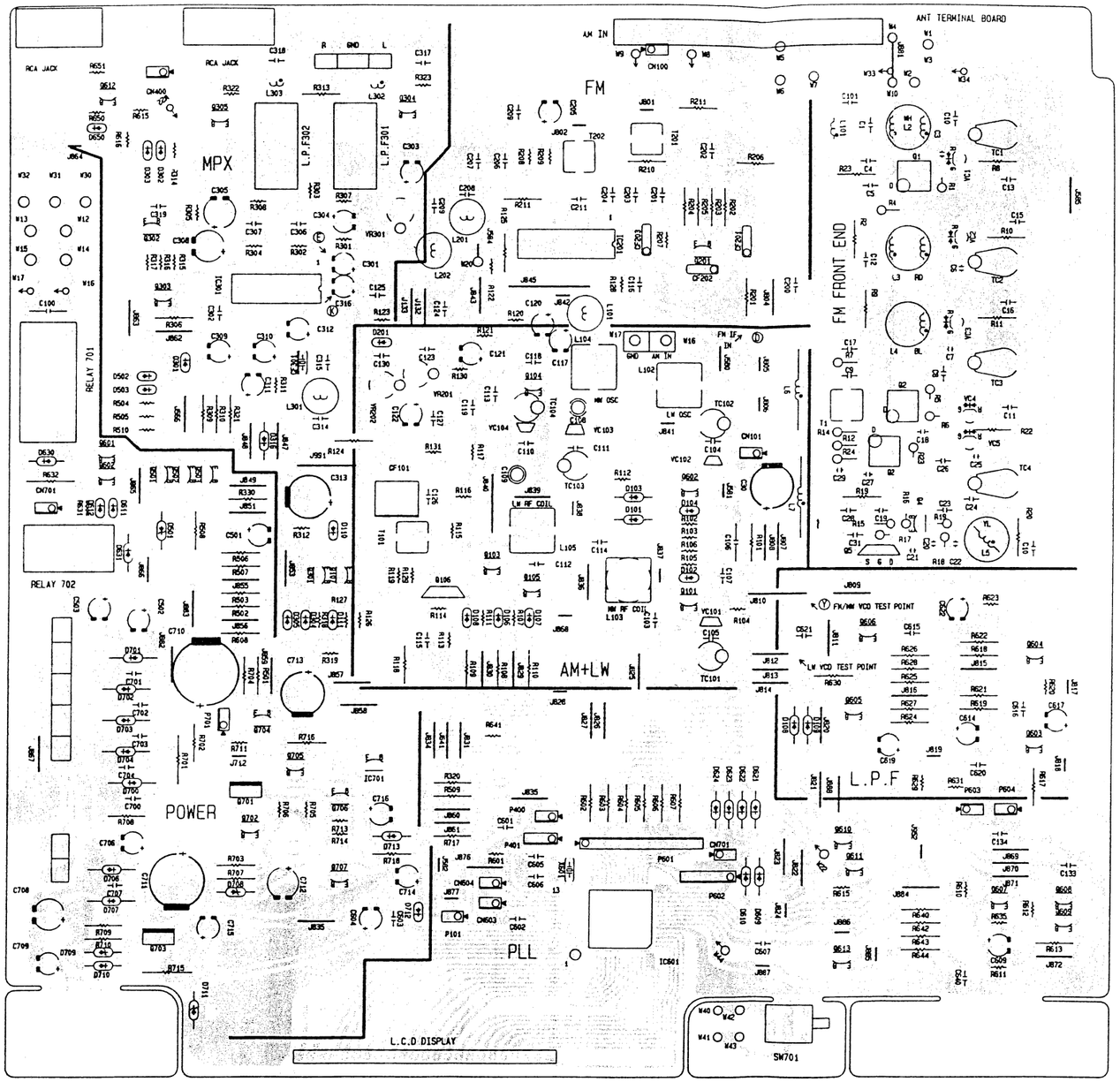
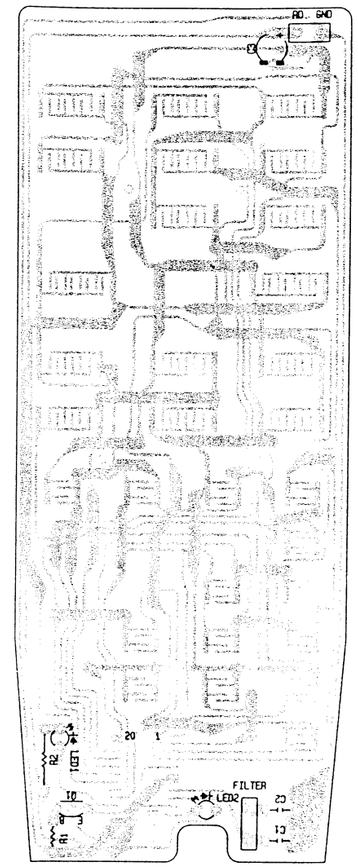


NOTES: 1. Resistance values are indicated in ohms unless otherwise specified (K = 1000, M = 1,000,000).
2. Capacitance values are shown in microfarads unless otherwise (P = MICRO-MICRO FARADS).

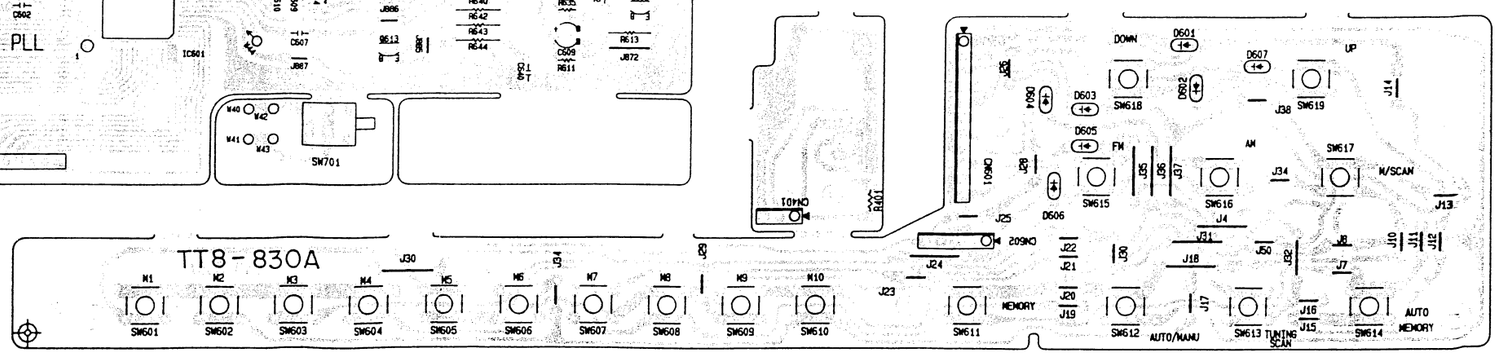
• MAIN P. C. BOARD



• REMOCON P. C. BOARD



• SWITCH P. C. BOARD



ADJUSTMENTS

This set has been aligned at the factory and normally will not require further adjustment. As a result, it is not recommended that any attempt is made to modificate any circuit. If any parts are replaced or if anyone tampers with the adjustment, realignment may be necessary.

IMPORTANT

1. Check power-source voltage.
2. Set the function switch to band being aligned.
3. Turn volume control to minimum unless otherwise noted.
4. Keep the signal input as low as possible to avoid AGC and AFC action.
5. Standard modulation is 400Hz at 30% for AM (400Hz at 22.5kHz deviation for FM).

TEST AND ADJUSTMENT POINTS

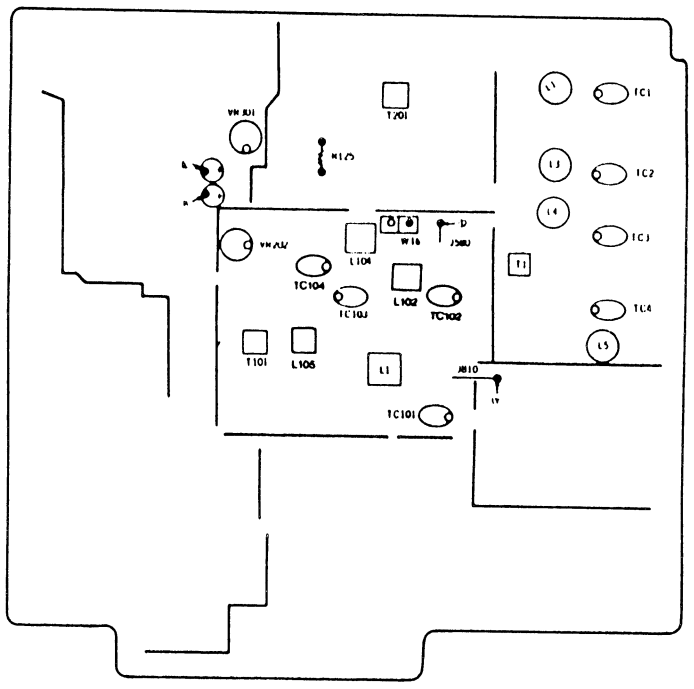


Figure 1. Main P.C. Board View

1. MW/LW IF ADJUSTMENT

IF Genescope ..... Connect the input to test point W16 (AM IN), the output to test point K (C316).
Adjust for the IF waveform of Genescope to be maximum.

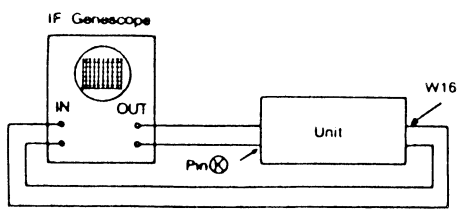


Figure 2 MW/LW IF Adjustment Connection Diagram

IF	Adjust For	Adjustment
450kHz	Maximum	T101

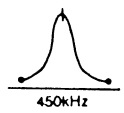


Figure 3 MW/LW IF Curve

2. MW COVERAGE ADJUSTMENT

DC Voltmeter ..... Connect to Ⓨ and GND.

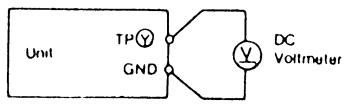


Figure 4 MW Coverage Adjustment Connection Diagram

Step	Frequency	Adjust For	Adjustment
1	522kHz	3.9V	L104
2	1611kHz	24.5V	TC103
3	Repeat steps 1 and 2 several times.		

3. LW COVERAGE ADJUSTMENT

DC Voltmeter ..... Connect to test point tin wire (right side of TC101) and GND.

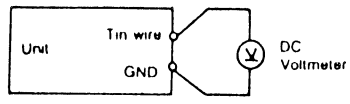


Figure 5 LW Coverage Adjustment Connection Diagram

Step	Frequency	Adjust For	Adjustment
1	153kHz	1.8V	L105
2	281kHz	18V	TC104
3	Repeat steps 1 and 2 several times.		

4. MW/LW TRACKING ADJUSTMENT

Signal Generator ..... Connects to the MW antenna coil through the loop antenna.
Adjust for the indication of Electronic Voltmeter and the waveform of Oscilloscope to be maximum.

Step	Band	Frequency	Adjust For	Adjustment
1	MW	603kHz	Maximum Sensitivity	L103
2		1404kHz	Maximum Sensitivity	TC101
3		Repeat steps 1 and 2 several times.		
1	LW	164kHz	Maximum Sensitivity	L102
2		254kHz	Maximum Sensitivity	TC102
3		Repeat steps 1 and 2 several times.		

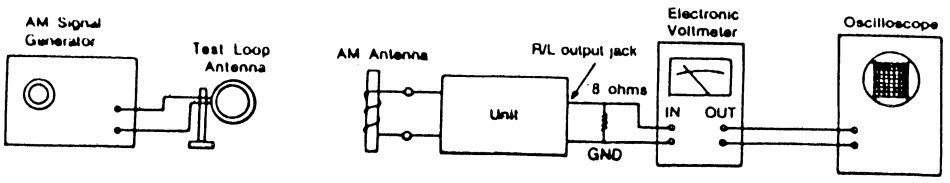


Figure 6 MW/LW Tracking Adjustment Connection Diagram

5. FM IF ADJUSTMENT

IF Genescope ..... Connect the input to test point Ⓓ the output to Ⓔ.

Step	Adjust For	Adjustment	Remarks
1	Maximum liner S curve	T1	See Figures 7 and 8.

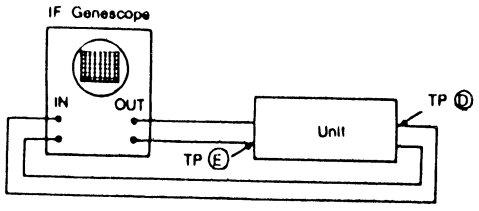


Figure 7 FM IF Adjustment Connection Diagram

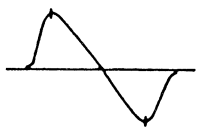


Figure 8 FM "S" Curve

6. FM RF (COVERAGE & TRACKING) ADJUSTMENT

Signal Generator ..... Connect to FM Antenna Terminal (FM IN) through the dummy.
DC Voltmeter ..... Connect to R/L output jack.

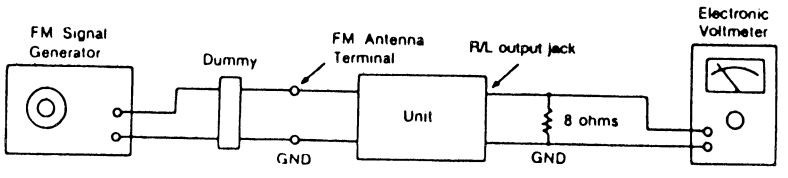


Figure 9 FM RF Adjustment Connection Diagram

Step	Test Stage	Frequency	Adjust For	Adjustment
1	Band Coverage	87.5MHz	4.3V	L5
2		108.00MHz	24.5V	TC4
3		Repeat steps 1 and 2 several times.		
4	Tracking	90.1MHz	Maximum Sensitivity	L2, L3, L4
5		106.1MHz	Maximum Sensitivity	TC1, TC2, TC3
6		Repeat steps 4 and 5 several times.		

7. FM T.H.D. ADJUSTMENT

Signal Generator ..... Connect to FM Antenna Terminal (FM IN) through the dummy.
Distortion Meter ..... Connect to the speaker output.

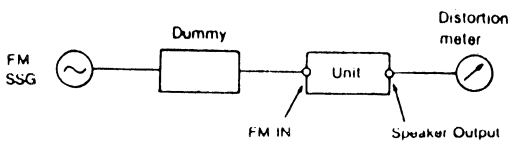


Figure 10 FM T.H.D Adjustment Connection Diagram

Frequency	Adjust For	Adjustment
98MHz	Minimum T.H.D.	T103

NOTE: At this time, the DC voltage both side of R125 should be realigned by T201 to keep on 0 voltage, because the "S" curve may be detuned.

8. FM MPX ADJUSTMENT-SEPARATION

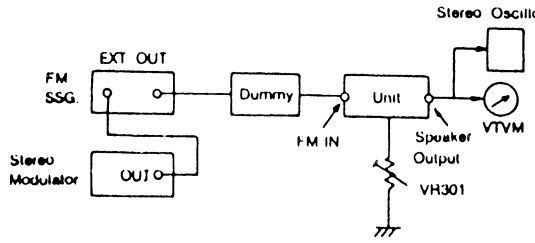


Figure 11 FM MPX Adjustment Connection Diagram

Pilot Signal	Adjust For	Adjustment
ON	Difference of R and L must be maximum	VR301 TI-Detailed adjustment

NOTE: In case of adjusting the stereo separation, if input is L (or R) channel, R (or L) channel must be maximum.

9. FM STEREO BEACON SENSITIVITY & AUTO SEARCH LEVEL

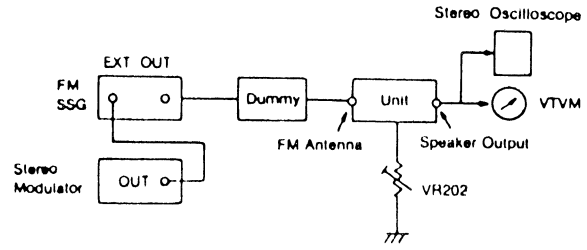
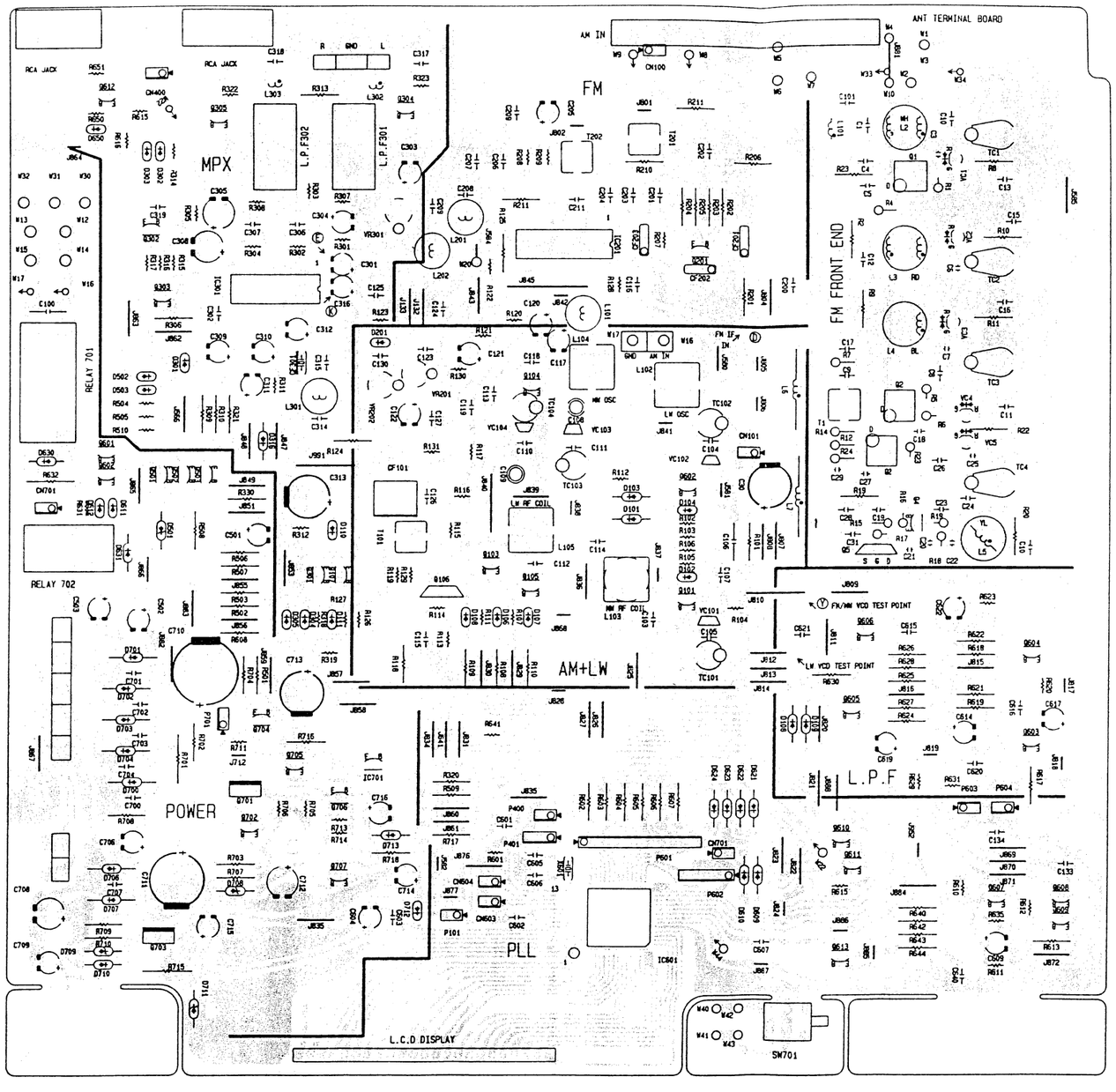


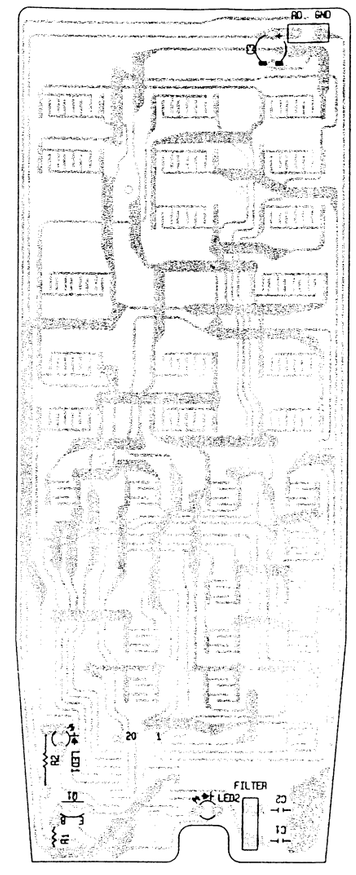
Figure 12 FM Stereo Beacon Sensitivity & Auto Search Level Adjustment Connection Diagram

Pilot Signal	Input of FM IN	Adjust For	Adjustment
ON	15 ± 5dB	Stereo LED lamp-ON	VR202

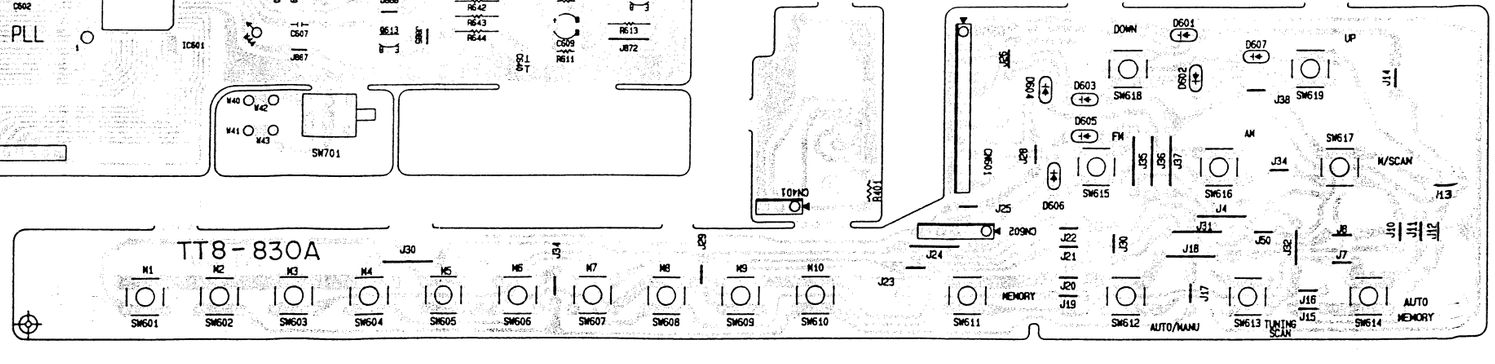
• MAIN P. C. BOARD



• REMOCON P. C. BOARD



• SWITCH P. C. BOARD



ADJUSTMENTS

This set has been aligned at the factory and normally will not require further adjustment. As a result, it is not recommended that any attempt is made to modificate any circuit. If any parts are replaced or if anyone tampers with the adjustment, realignment may be necessary.

IMPORTANT

1. Check power-source voltage.
2. Set the function switch to band being aligned.
3. Turn volume control to minimum unless otherwise noted.
4. Keep the signal input as low as possible to avoid AGC and AFC action.
5. Standard modulation is 400Hz at 30% for AM (400Hz at 22.5kHz deviation for FM).

TEST AND ADJUSTMENT POINTS

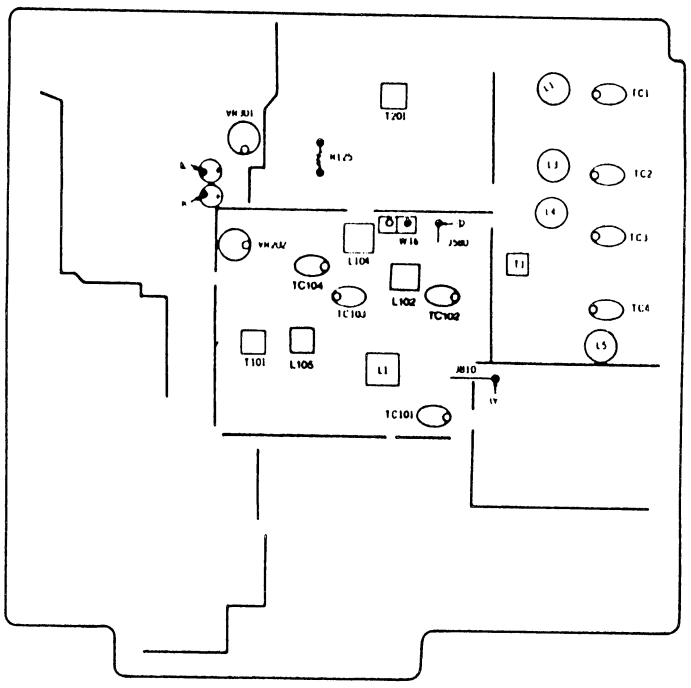


Figure 1. Main P.C. Board View

1. MW/LW IF ADJUSTMENT

IF Genescope ..... Connect the input to test point W16 (AM IN), the output to test point K (C316). Adjust for the IF waveform of Genescope to be maximum.

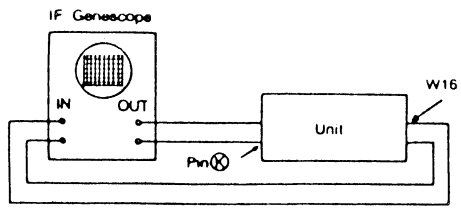


Figure 2 MW/LW IF Adjustment Connection Diagram

IF	Adjust For	Adjustment
450kHz	Maximum	T101

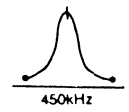


Figure 3 MW/LW IF Curve

2. MW COVERAGE ADJUSTMENT

DC Voltmeter ..... Connect to Ⓨ and GND.

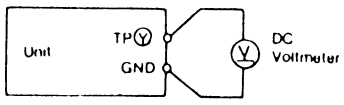


Figure 4 MW Coverage Adjustment Connection Diagram

Step	Frequency	Adjust For	Adjustment
1	522kHz	3.9V	L104
2	1611kHz	24.5V	TC103
3	Repeat steps 1 and 2 several times.		

3. LW COVERAGE ADJUSTMENT

DC Voltmeter ..... Connect to test point tin wire (right side of TC101) and GND.

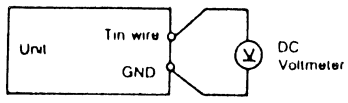


Figure 5 LW Coverage Adjustment Connection Diagram

Step	Frequency	Adjust For	Adjustment
1	153kHz	1.8V	L105
2	281kHz	18V	TC104
3	Repeat steps 1 and 2 several times.		

4. MW/LW TRACKING ADJUSTMENT

Signal Generator ..... Connects to the MW antenna coil through the loop antenna.
Adjust for the indication of Electronic Voltmeter and the waveform of Oscilloscope to be maximum.

Step	Band	Frequency	Adjust For	Adjustment
1	MW	603kHz	Maximum Sensitivity	L103
2		1404kHz	Maximum Sensitivity	TC101
3		Repeat steps 1 and 2 several times.		
1	LW	164kHz	Maximum Sensitivity	L102
2		254kHz	Maximum Sensitivity	TC102
3		Repeat steps 1 and 2 several times.		

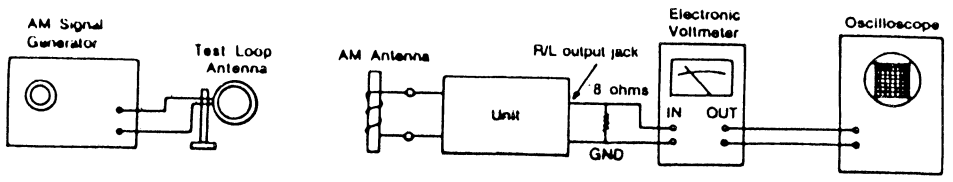


Figure 6 MW/LW Tracking Adjustment Connection Diagram

5. FM IF ADJUSTMENT

IF Genescope ..... Connect the input to test point Ⓓ the output to Ⓔ.

Step	Adjust For	Adjustment	Remarks
1	Maximum liner S curve	T1	See Figures 7 and 8.

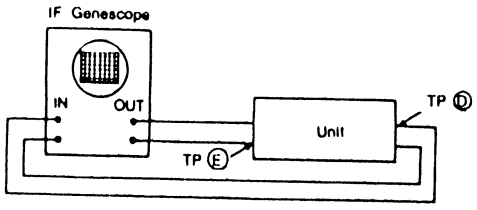


Figure 7 FM IF Adjustment Connection Diagram

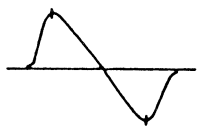


Figure 8 FM "S" Curve

6. FM RF (COVERAGE & TRACKING) ADJUSTMENT

Signal Generator ..... Connect to FM Antenna Terminal (FM IN) through the dummy.
DC Voltmeter ..... Connect to R/L output jack.

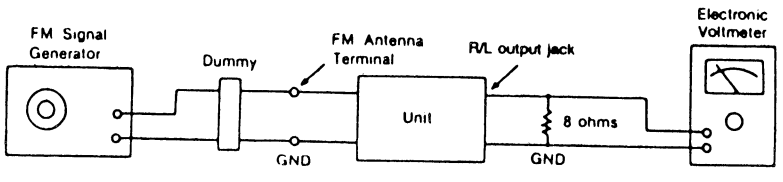


Figure 9 FM RF Adjustment Connection Diagram

Step	Test Stage	Frequency	Adjust For	Adjustment
1	Band Coverage	87.5MHz	4.3V	L5
2		108.00MHz	24.5V	TC4
3		Repeat steps 1 and 2 several times.		
4	Tracking	90.1MHz	Maximum Sensitivity	L2, L3, L4
5		106.1MHz	Maximum Sensitivity	TC1, TC2, TC3
6		Repeat steps 4 and 5 several times.		

7. FM T.H.D. ADJUSTMENT

Signal Generator ..... Connect to FM Antenna Terminal (FM IN) through the dummy.
Distortion Meter ..... Connect to the speaker output.

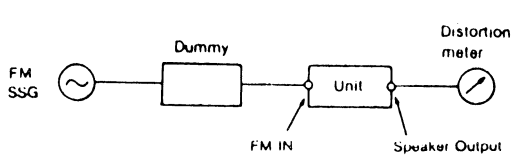


Figure 10 FM T.H.D Adjustment Connection Diagram

Frequency	Adjust For	Adjustment
98MHz	Minimum T.H.D.	T103

NOTE: At this time, the DC voltage both side of R125 should be realigned by T201 to keep on 0 voltage, because the "S" curve may be detuned.

8. FM MPX ADJUSTMENT-SEPARATION

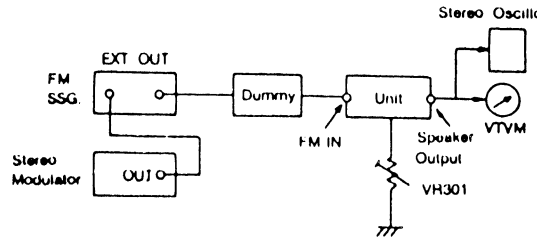


Figure 11 FM MPX Adjustment Connection Diagram

Pilot Signal	Adjust For	Adjustment
ON	Difference of R and L must be maximum	VR301 TI-Detailed adjustment

NOTE: In case of adjusting the stereo separation, if input is L (or R) channel, R (or L) channel must be maximum.

9. FM STEREO BEACON SENSITIVITY & AUTO SEARCH LEVEL

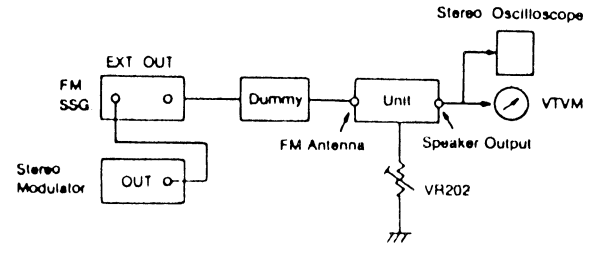
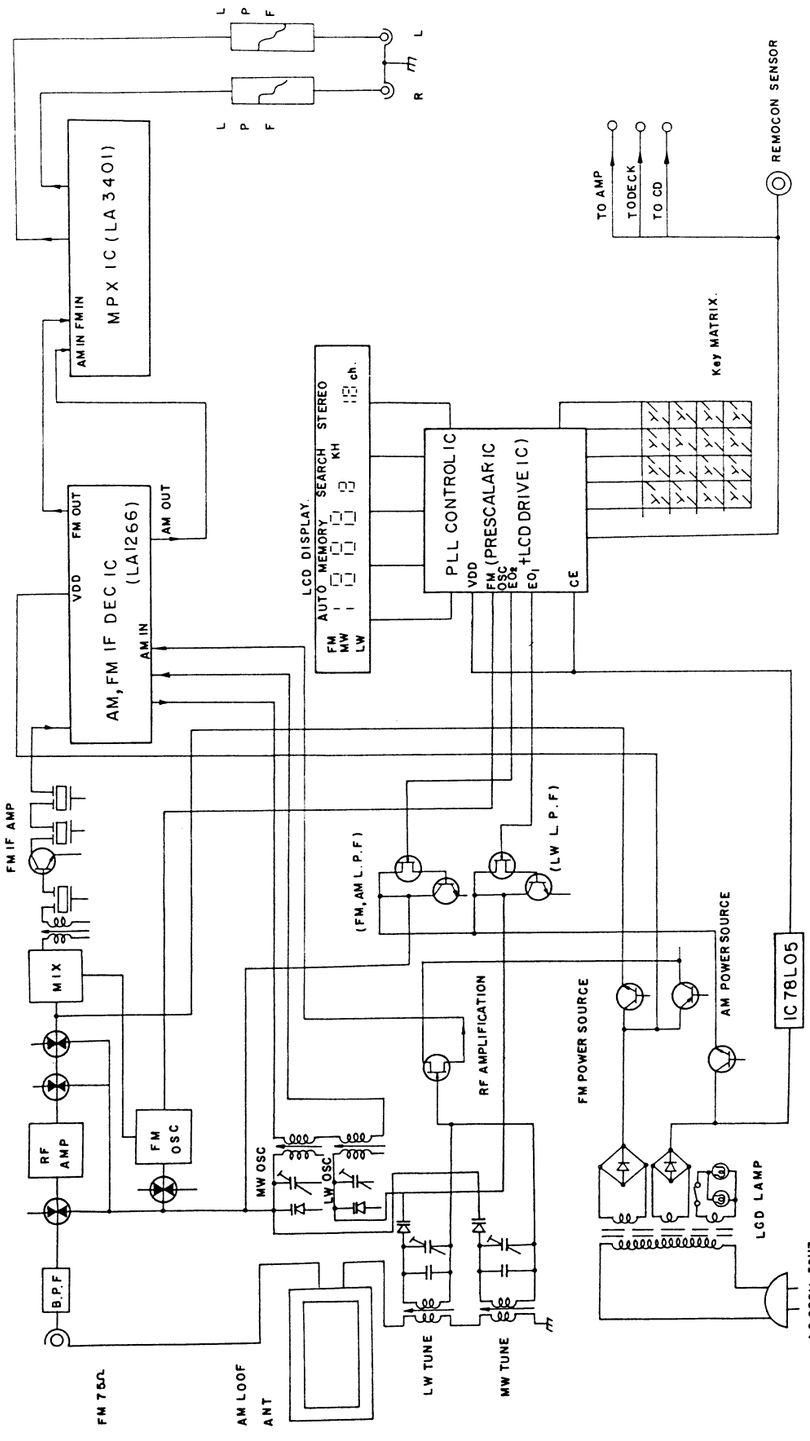


Figure 12 FM Stereo Beacon Sensitivity & Auto Search Level Adjustment Connection Diagram

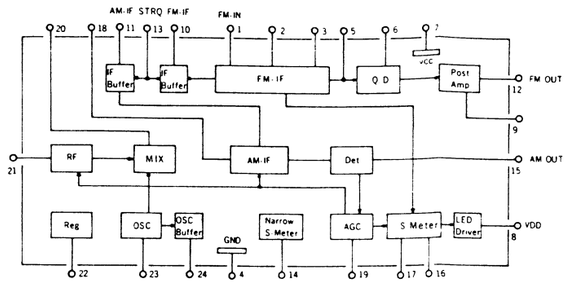
Pilot Signal	Input of FM IN	Adjust For	Adjustment
ON	15 ± 5dB	Stereo LED lamp-ON	VR202

BLOCK DIAGRAM

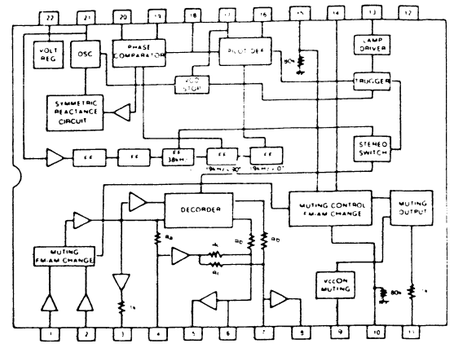


IC EQUIVALENT CIRCUITS

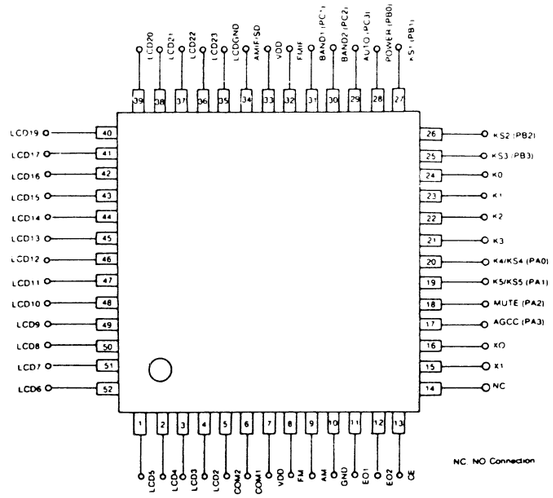
IC201 LA1266 (AM/FM IF)



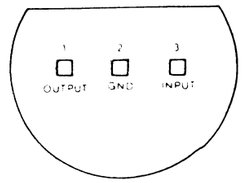
IC301 LA3401 (MPX)



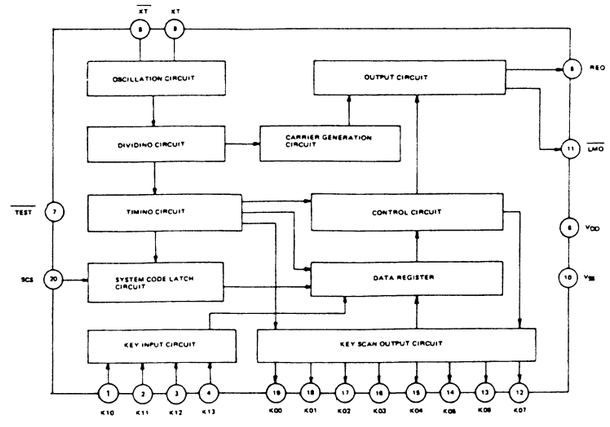
IC601 μPD1713AG (Digital Tuning System)

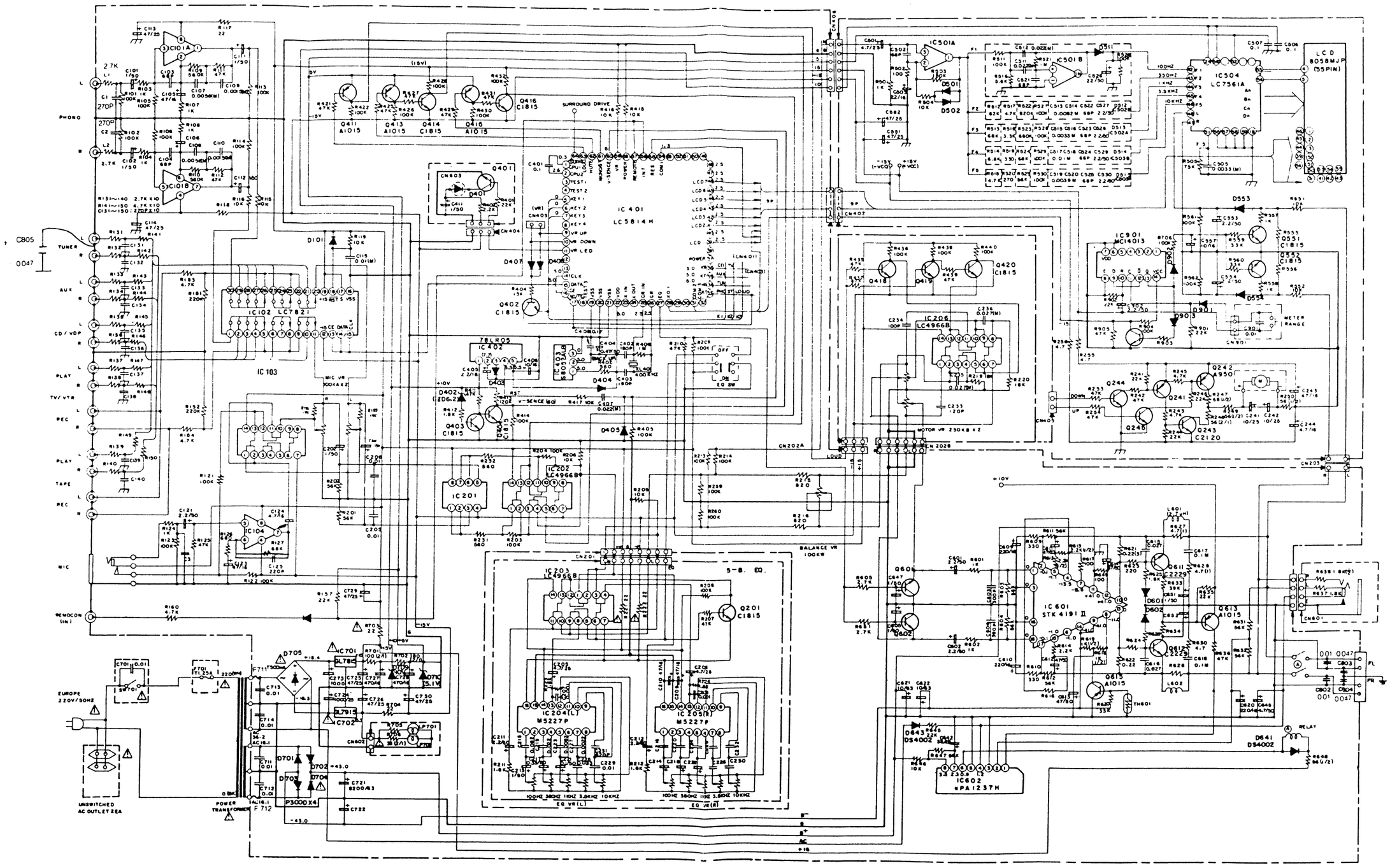

LCD19 LCD20 LCD21 LCD22 LCD23 LCDGND AMIFSO VDD FMIF BAND1 (PC1) BAND2 (PC2) ALC (PC3) POWER (PB0) +S1 (PB1)
LCD19 LCD17 LCD16 LCD15 LCD14 LCD13 LCD12 LCD11 LCD10 LCD9 LCD8 LCD7 LCD6
+S2 (PB2)
+S3 (PB3)
×0
×1
×2
×3
×4/KS4 (PA0)
×5/KS5 (PA1)
MUTE (PA2)
AGCC (PA3)
KO
K1
NC
LCD5 LCD4 LCD3 LCD2 COM2 COM1 VDD FM O AM GND EO EO2 CE
NC NO Connection

IC701 μPC78L05J (Voltage Regulator)



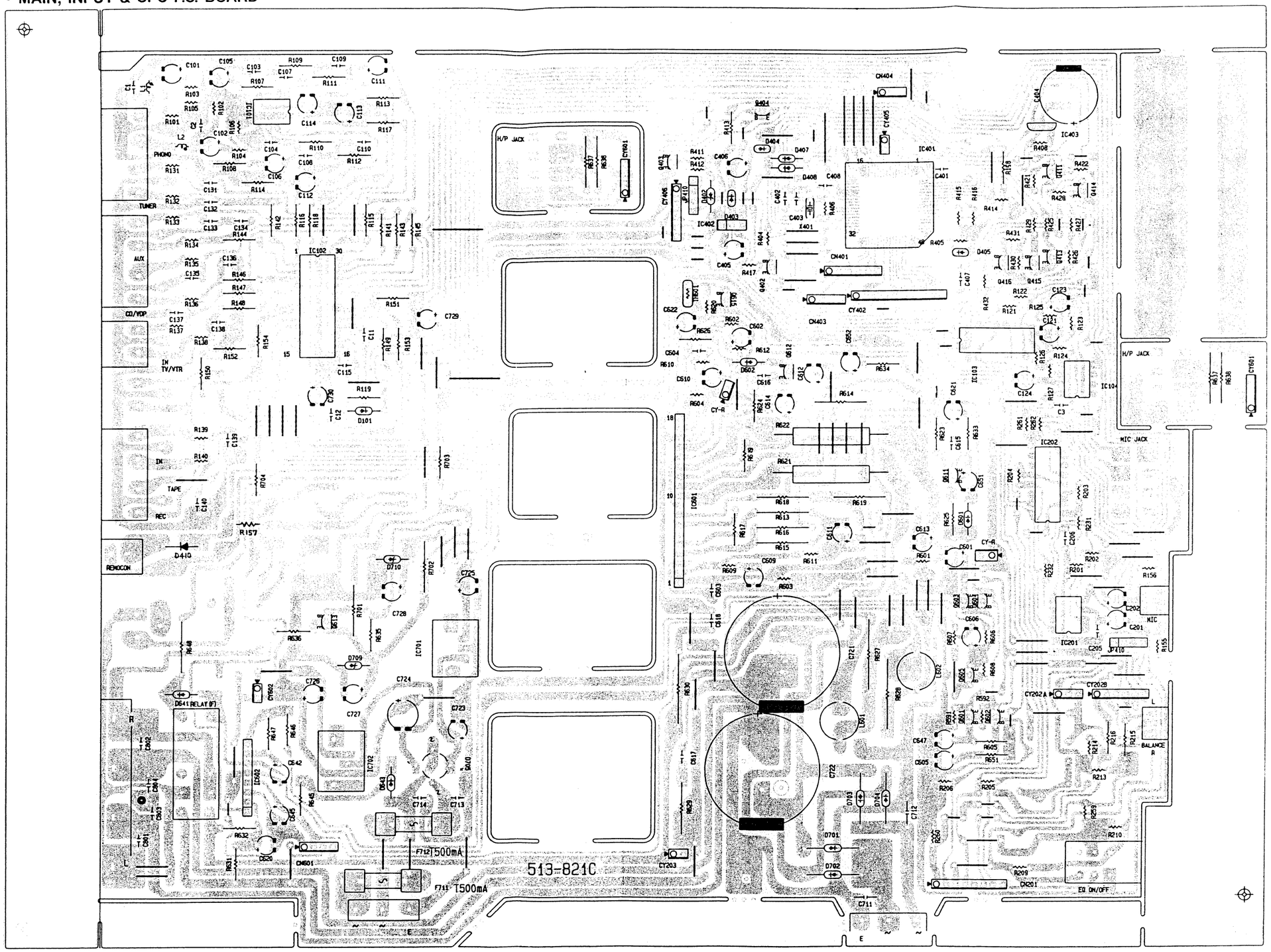
IC901 TC9012F (Remote Transmitter)

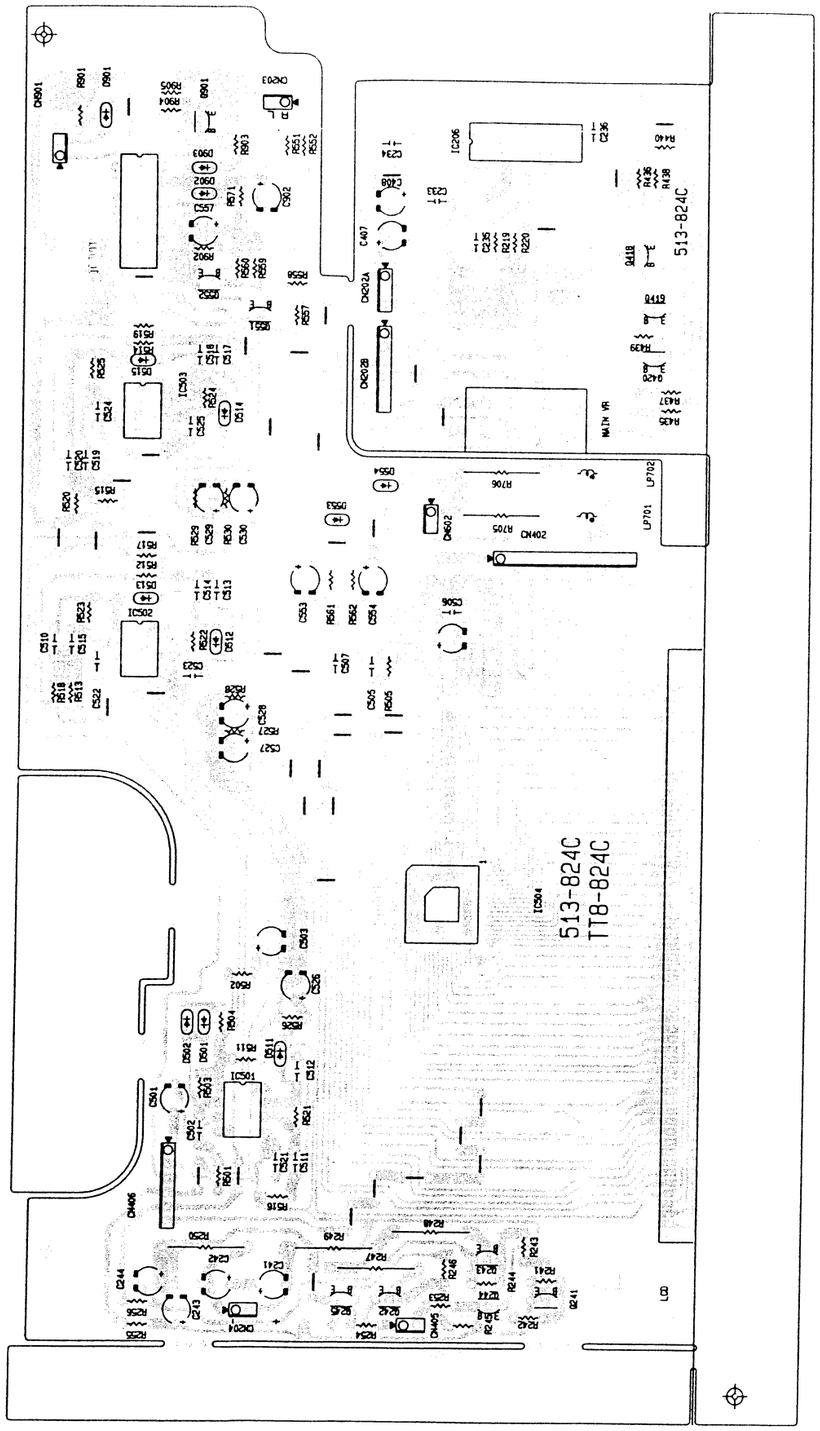


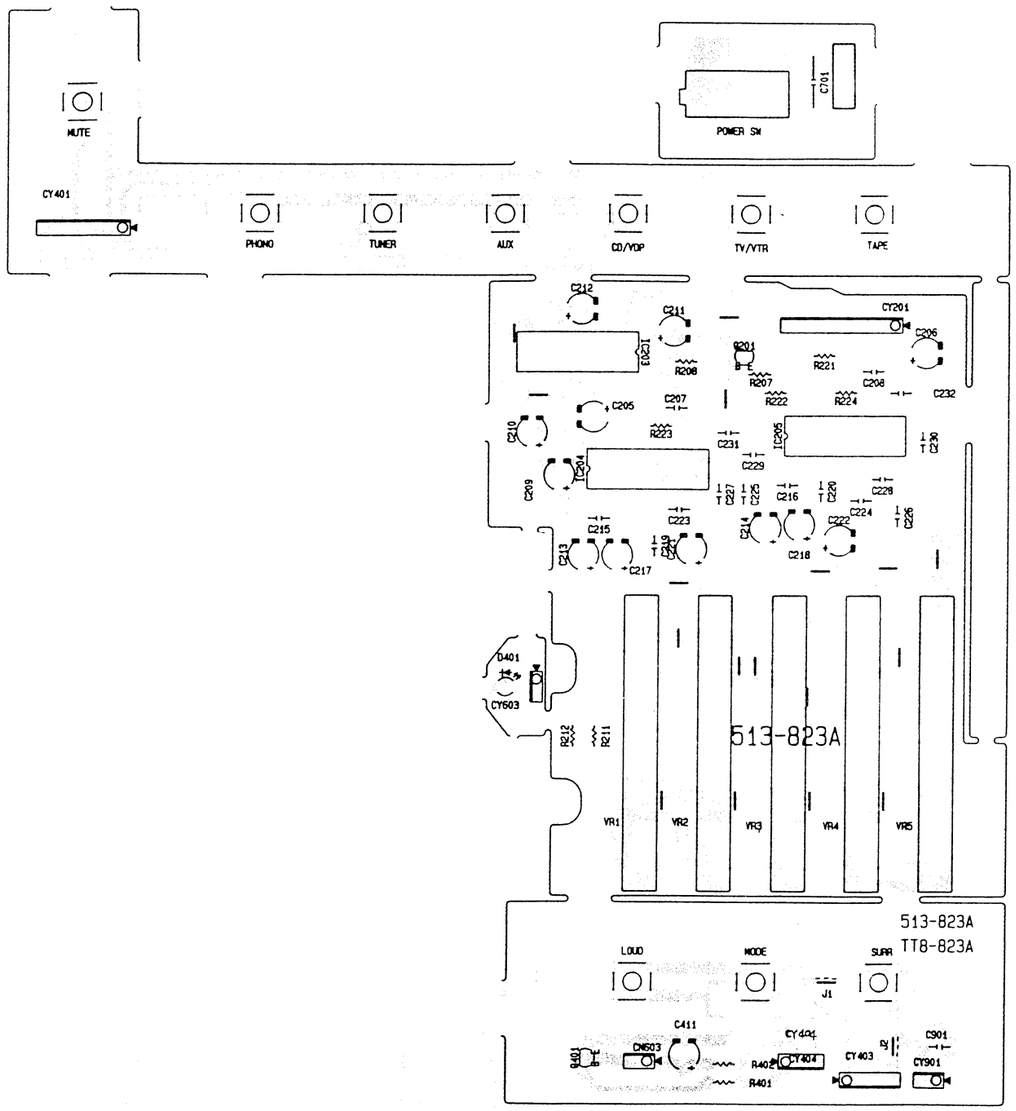


NOTES: 1. Resistance values are indicated in ohms unless otherwise specified (K = 1000, M = 1,000,000).
2. Capacitance values are shown in microfarads unless otherwise (P = MICRO-MICRO FARADS).

• MAIN, INPUT & CPU P.C. BOARD

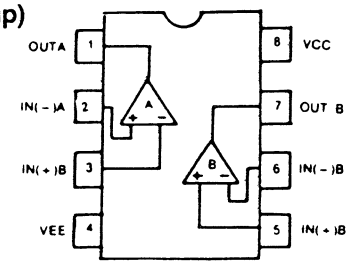



513-824C
TT8-824C
513-824C

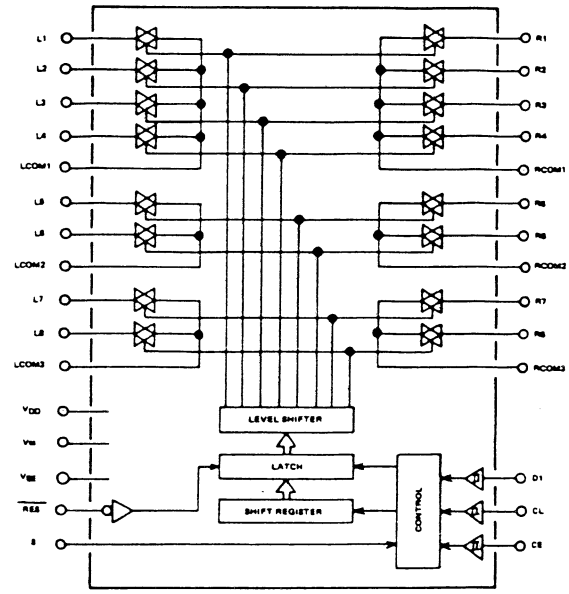

MUTE
POWER SW
PHONO
TUNER
AUX
CD/VDP
TV/VTR
TAPE
513-823A
513-823A
TT8-823A
LOUD
MODE
SURR

IC EQUIVALENT CIRCUITS

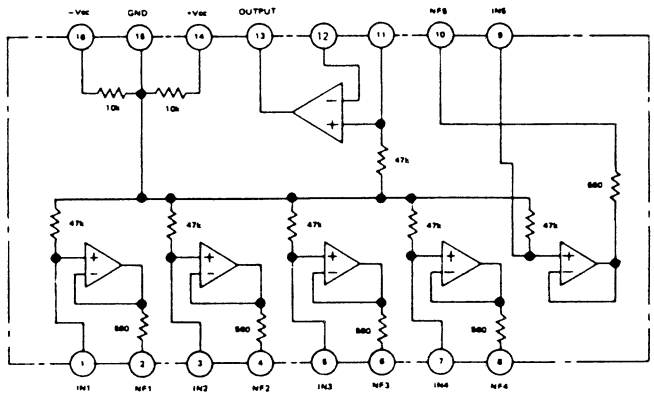
IC101, 104, 201, 501, 502, 503
KIA75558P (Dual OP Amp)



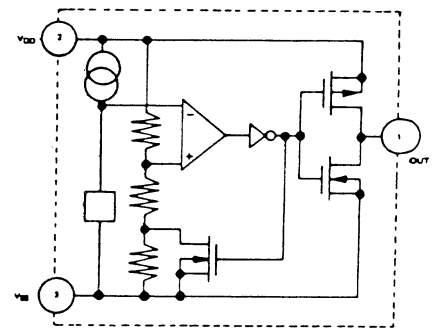
IC102 LC7821 (Analog Switch)



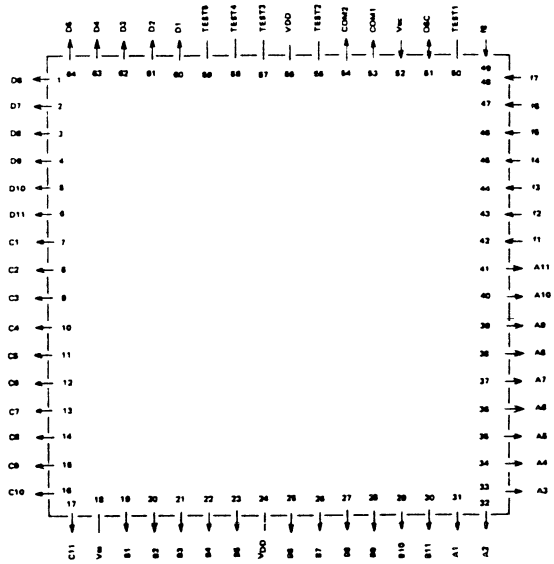
IC204, 205 M5227P (Graphic EQ)



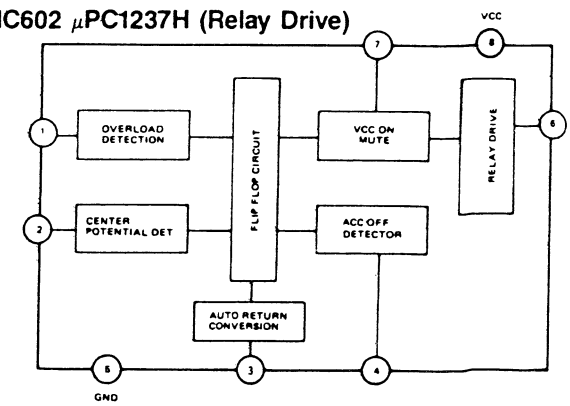
IC403 S8052ALB (Voltage Detector)



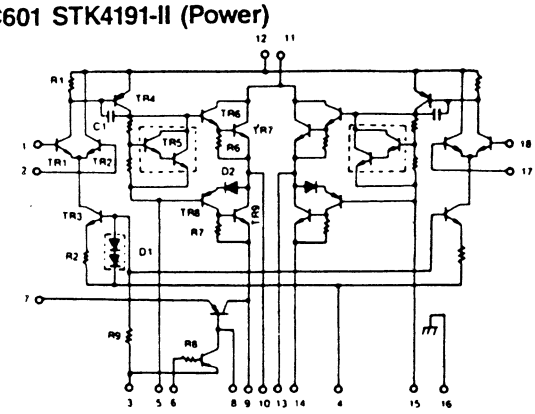
IC504 LC7561 (LCD Drive 8 Band EQ)

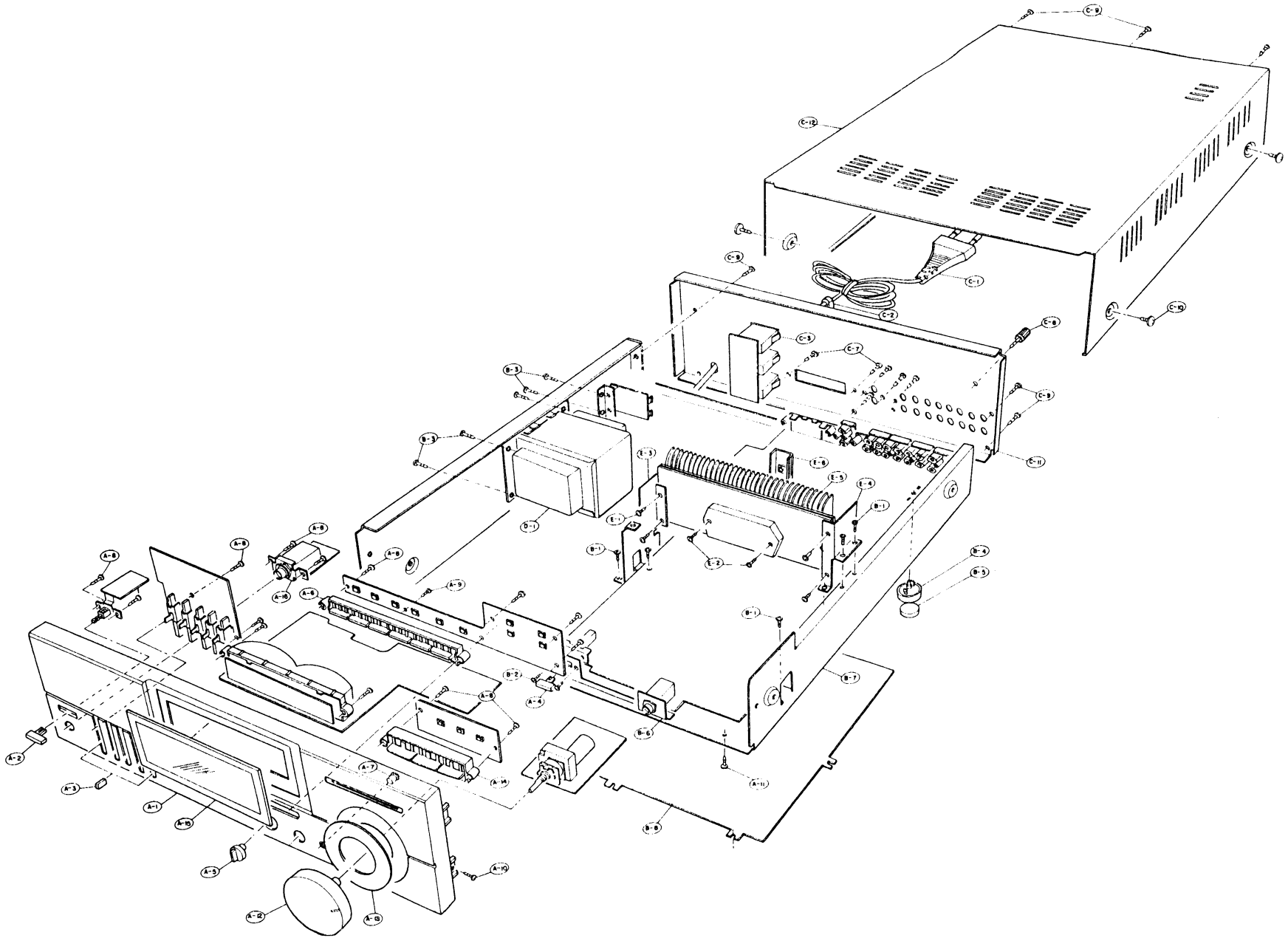


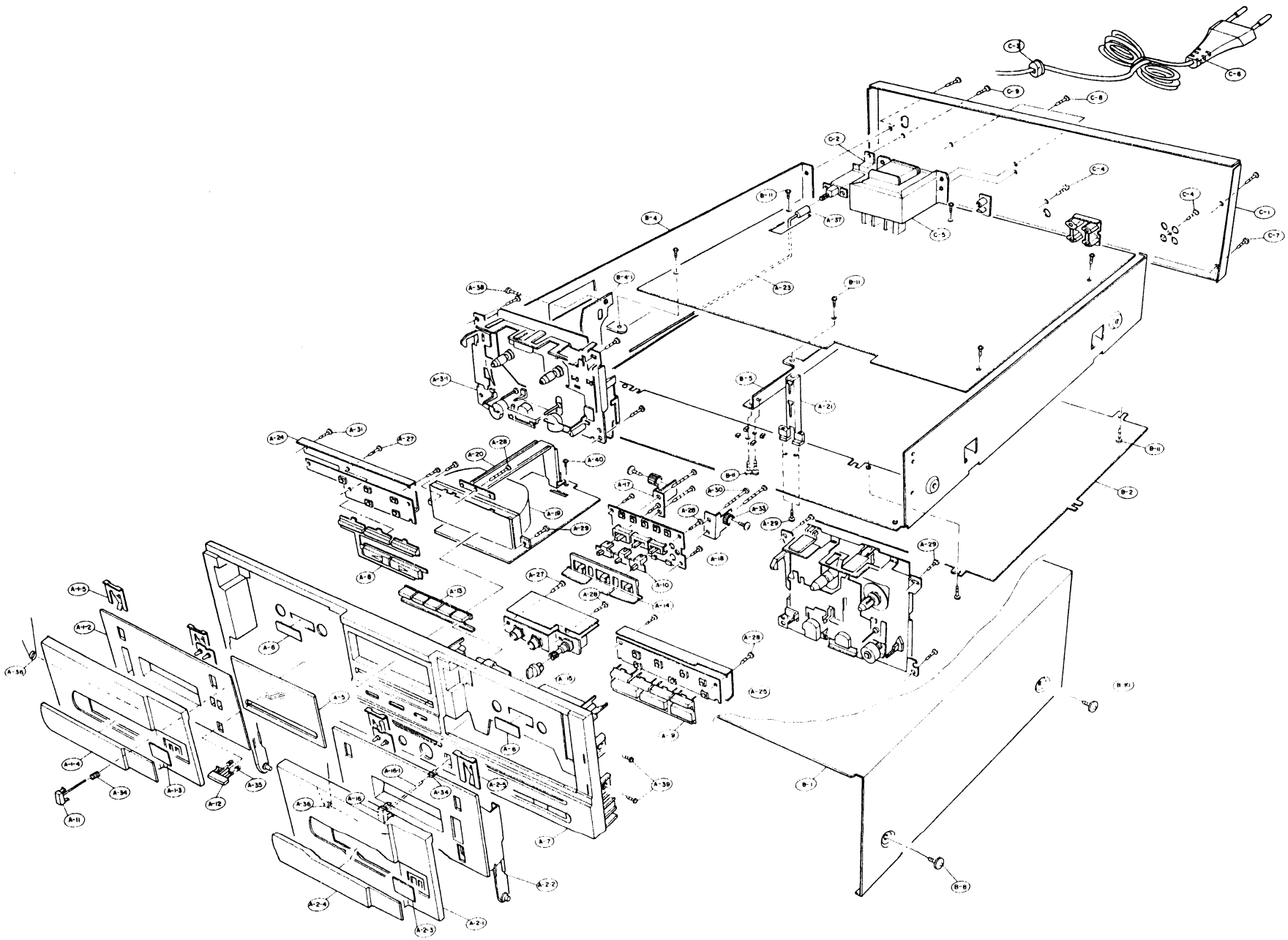
IC602 μPC1237H (Relay Drive)



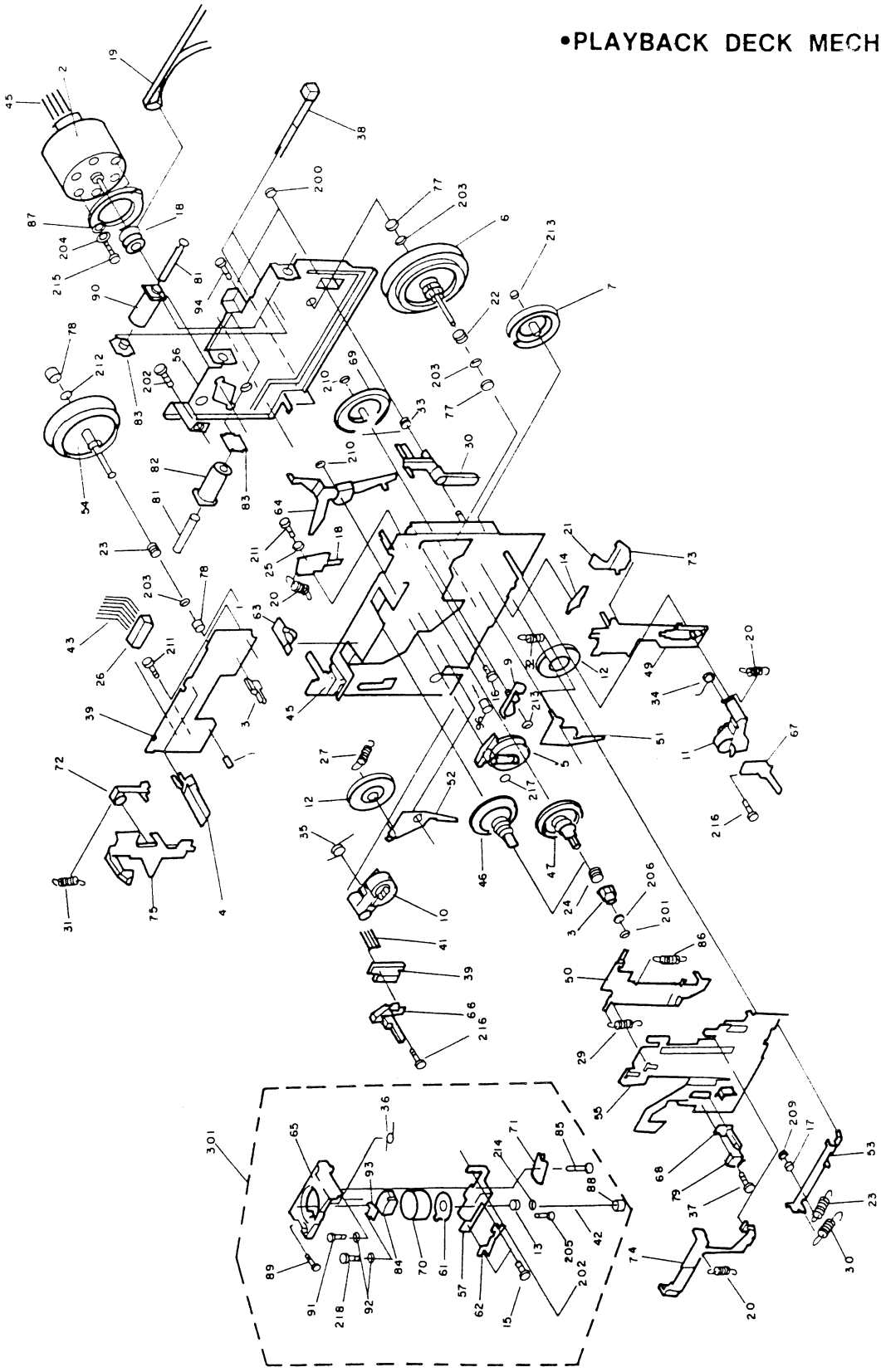
IC601 STK4191-II (Power)



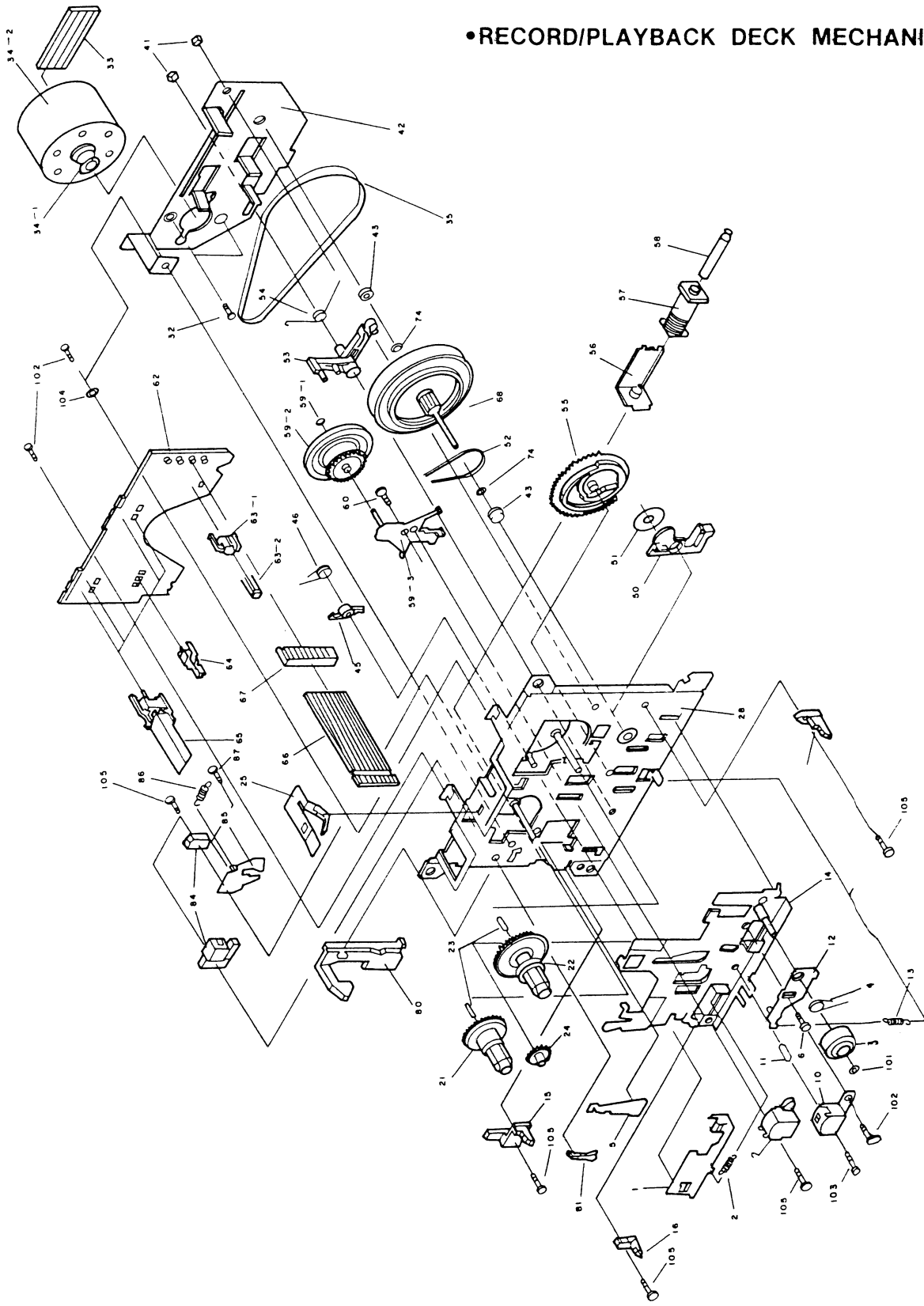




•PLAYBACK DECK MECHANISM



•RECORD/PLAYBACK DECK MECHANISM



ADJUSTMENTS

This set has been aligned at the factory and normally will not require further adjustment. As a result, it is not recommended that any attempt is made to modificate any circuit. If any parts are replaced or if anyone tampers with the adjustment, realignment may be necessary.

TEST AND ADJUSTMENT POINTS

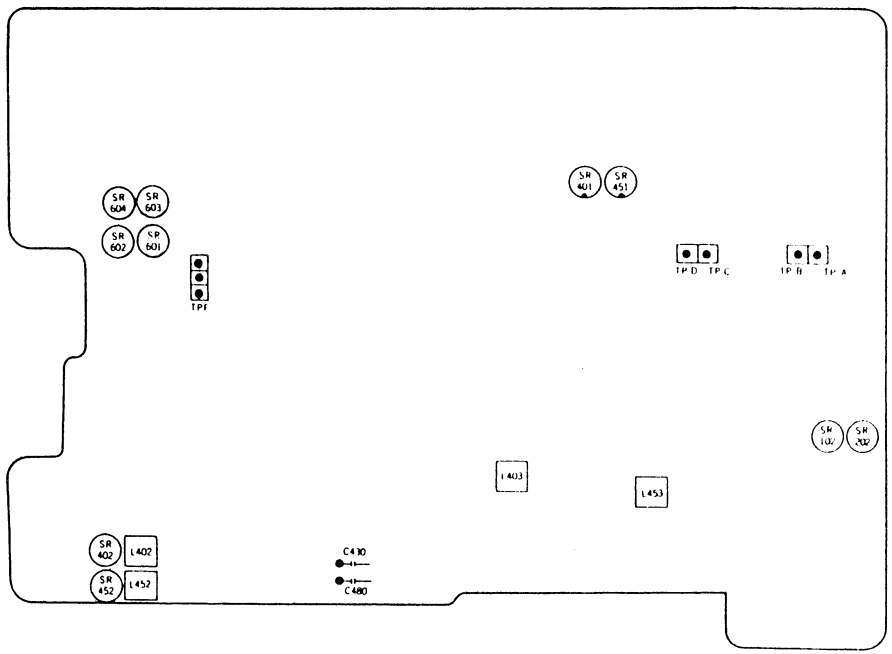


Figure 13. MAIN P.C. BOARD VIEW

1. AZIMUTH ADJUSTMENT

Deck	Deck Mode	Test Tape	Test Point	Adjustment	Adjust For	Remark
Deck II	FWD/RVS	MTT-114N	Line out	Head screw	R/L maximum	RVS: right screw
Deck I	Playback	MTT-114N	Line out	Head screw	R/L maximum	FWD: left screw

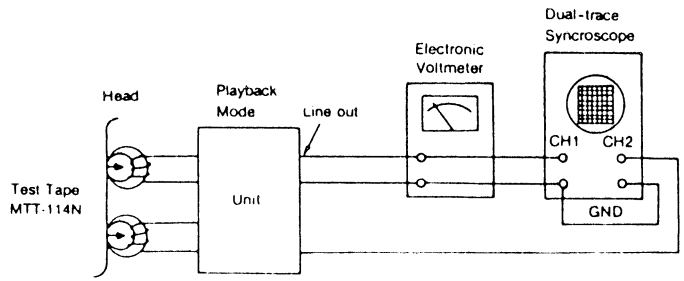


Figure 14. Azimuth Adjustment Connection Diagram

2. MOTOR SPEED ADJUSTMENT

Item	Deck	Deck Mode	Test Tape	Test Point	Adjustment	Adjust For	Remark
High Speed	Deck II	Playback	MTT-111	Line out	SR604	6kHz ± 60Hz	Shord-circuit the three pin of TPF.
	Deck I	High speed dubbing	MTT-111	Line out	SR603	6kHz ± 60Hz	
Normal Speed	Deck II	Playback	MTT-111	Line out	SR602	3kHz ± 30Hz	Restore the three pin of TPF.
	Deck I	Playback	MTT-111	Line out	SR601	3kHz ± 30Hz	

Perform the high speed adjustment first and then the normal speed adjustment.

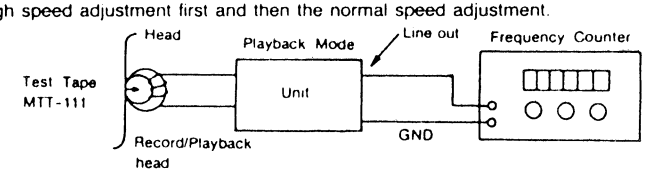


Figure 15. Motor Speed Adjustment Connection Diagram

3. PLAYBACK LEVEL ADJUSTMENT

Deck	Deck Mode	Test Tape	Test Point	Adjustment	Tape Output	Adjust For	Remark
Deck II	Playback	MTT-150	Line out	SR102	500mV	+ 1.5dB - 0.5dB	Dolby off
Deck I	Playback	MTT-150	Line out	SR202	500mV	+ 1.5dB - 0.5dB	

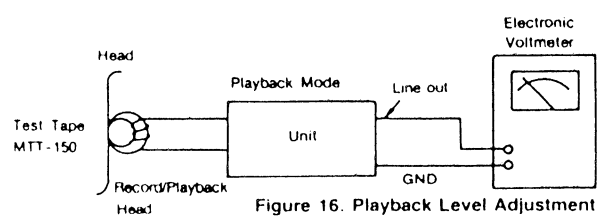


Figure 16. Playback Level Adjustment Connection Diagram

4. DOLBY C TYPE ADJUSTMENT

Deck	Deck Mode	Test Tape	Test Point	Line Input	Tape Output	Adjust For	Remark
Deck II	Rec/Pause	Blank tape	SR401/451 Center tap	17kHz 100mV (Dolby B ON → 0dB)	−8.3dB (Dolby C ON)	±0.1dB	Dolby B: 0dB · Dolby C
Deck I	Stop	—					

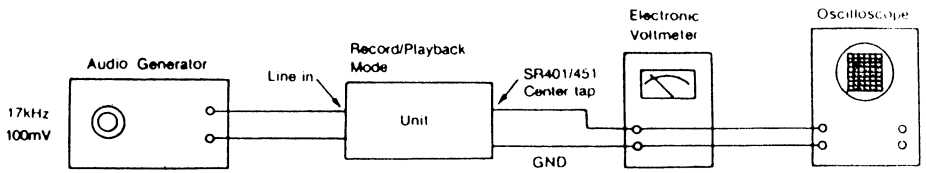


Figure 17. Dolby C-Type Adjustment Connection Diagram

5. BIAS TRAP ADJUSTMENT

Deck	Deck Mode	Test Tape	Test Point	Adjustment	Adjust For	Remark
Deck I	Rec/Pause	Metal tape	C430 C480	L402 L452	Minimum	Metal function
Deck II	Stop	—				

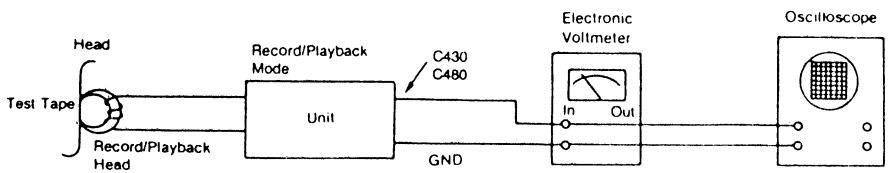


Figure 18. Bias Trap Adjustment Connection Diagram

6. RECORD PEAKING ADJUSTMENT

Deck	Deck Mode	Test Tape	Test Point	Adjustment	Line Input	Adjust For
Deck I	High speed dubbing	Blank tape	C430 C480	L403 L453	SR401/451 Center tap · 26kHz 100mV	Maximum
Deck II	High speed dubbing	Blank tape				

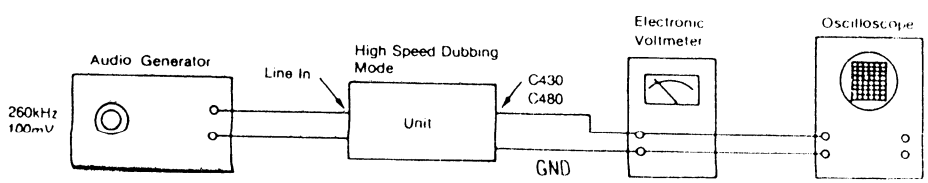
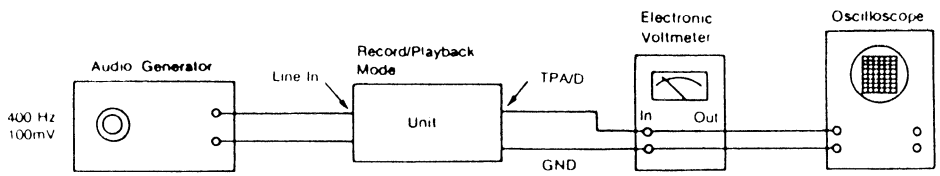


Figure 19. Record Peaking Adjustment Connection Diagram

7. RECORD/PLAYBACK CALIBRATION ADJUSTMENT

Deck	Deck Mode	Test Tape	Test Point	Adjustment	Line Input	Adjust For	Remark
Deck II	R/P · PB	MTT-5511 MTT-5561 MTT-5571	PB: TP B/C RP: TP A/D	SR401 SR451	TP A/D 300mV, 400Hz	300mV ± 1dB	Normal speed Volume max.
Deck I	Stop	—					



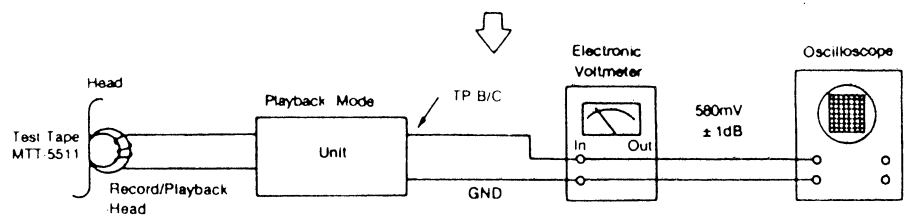
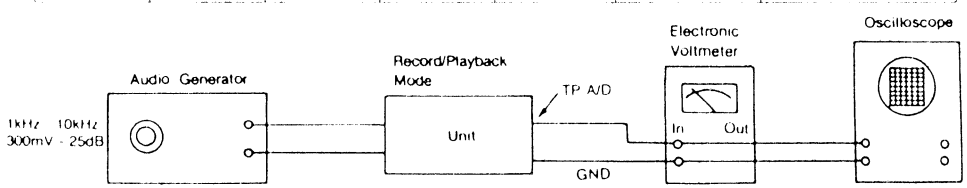


Figure 20. Record/Playback Calibration Adjustment Connection Diagram

8. RECORD/PLAYBACK FREQUENCY RESPONSE ADJUSTMENT

Deck	Deck Mode	Test Tape	Test Point	Adjustment	Line Input	Adjust For
Deck II	R/P → PB	MTT-5511 MTT-5561 MTT-5571	PB: TP B/C RP: TP A/D	SR402 SR452	1kHz ~ 10kHz 300mV ~ 25dB	Response of 1kHz and 10kHz; Flat
Deck I	Stop	—				



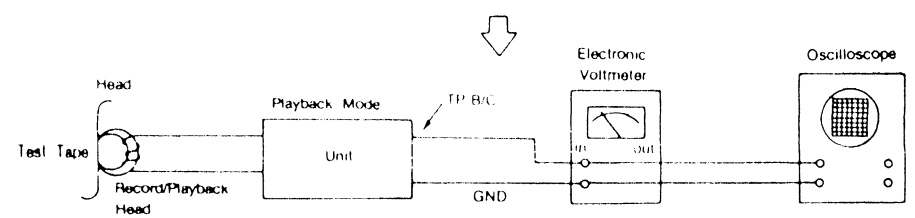
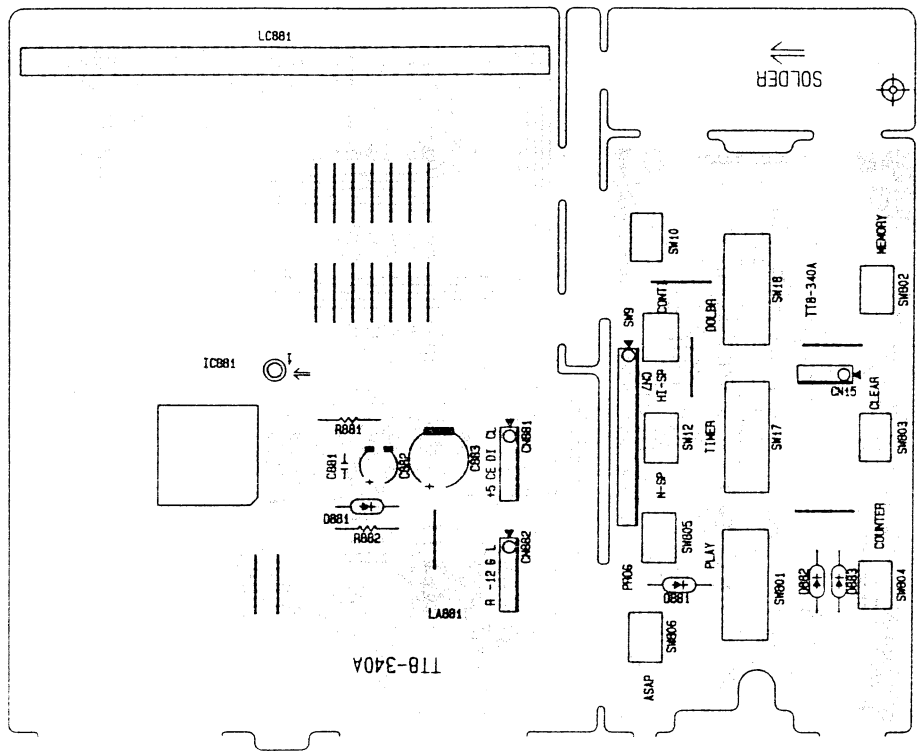
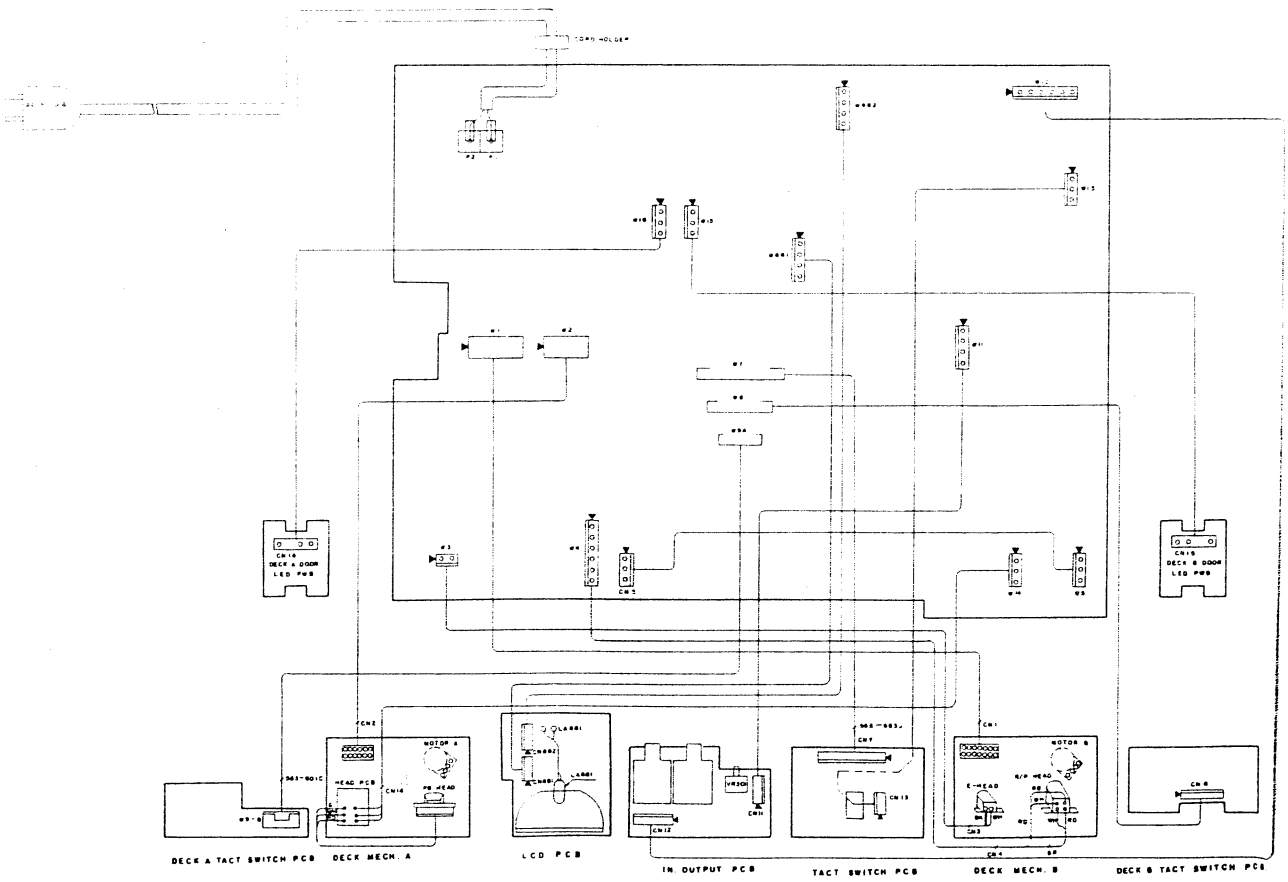


Figure 21. Record/Playback Frequency Response Adjustment Connection Diagram

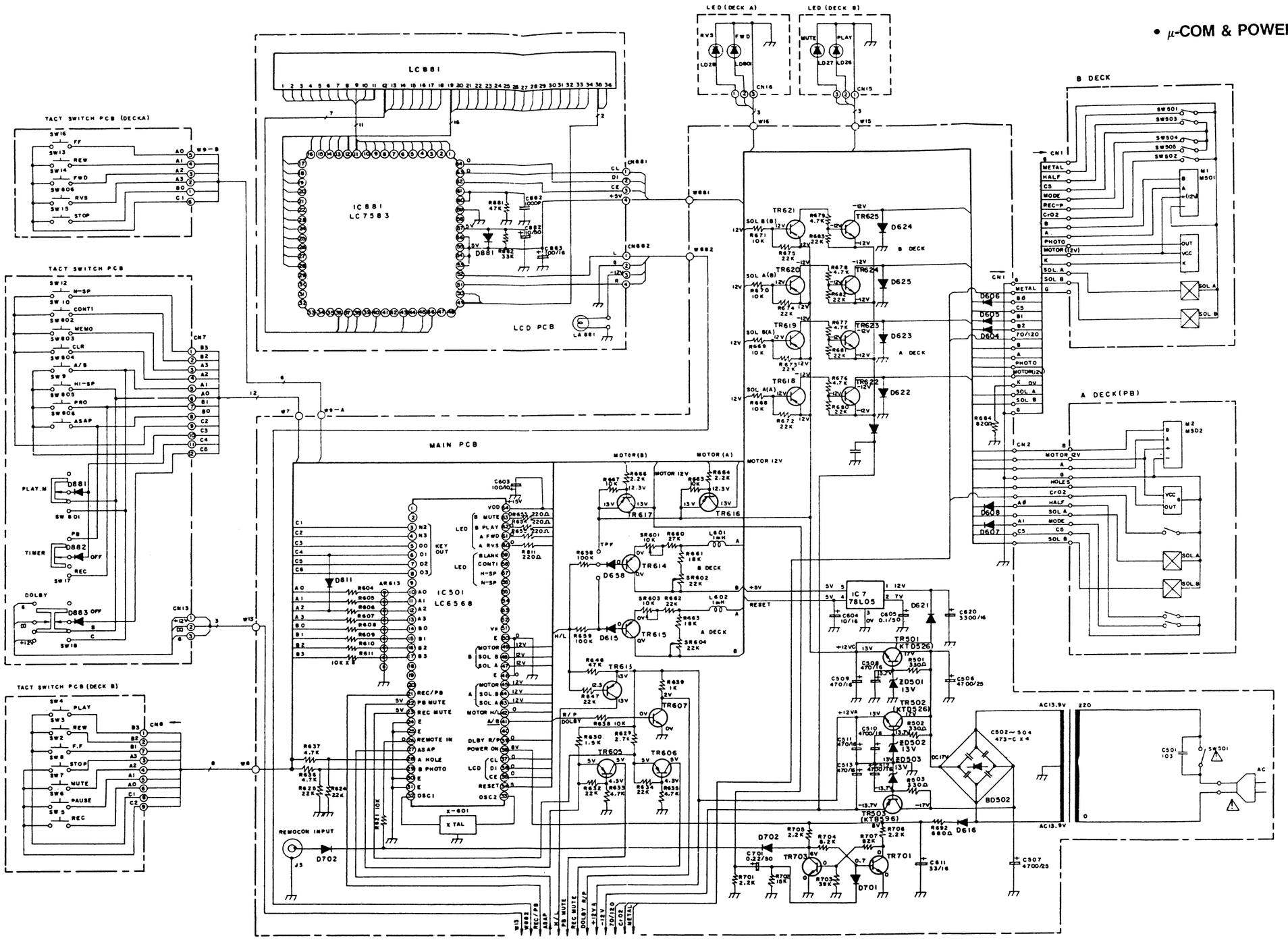
• SUB P. C. BOARD



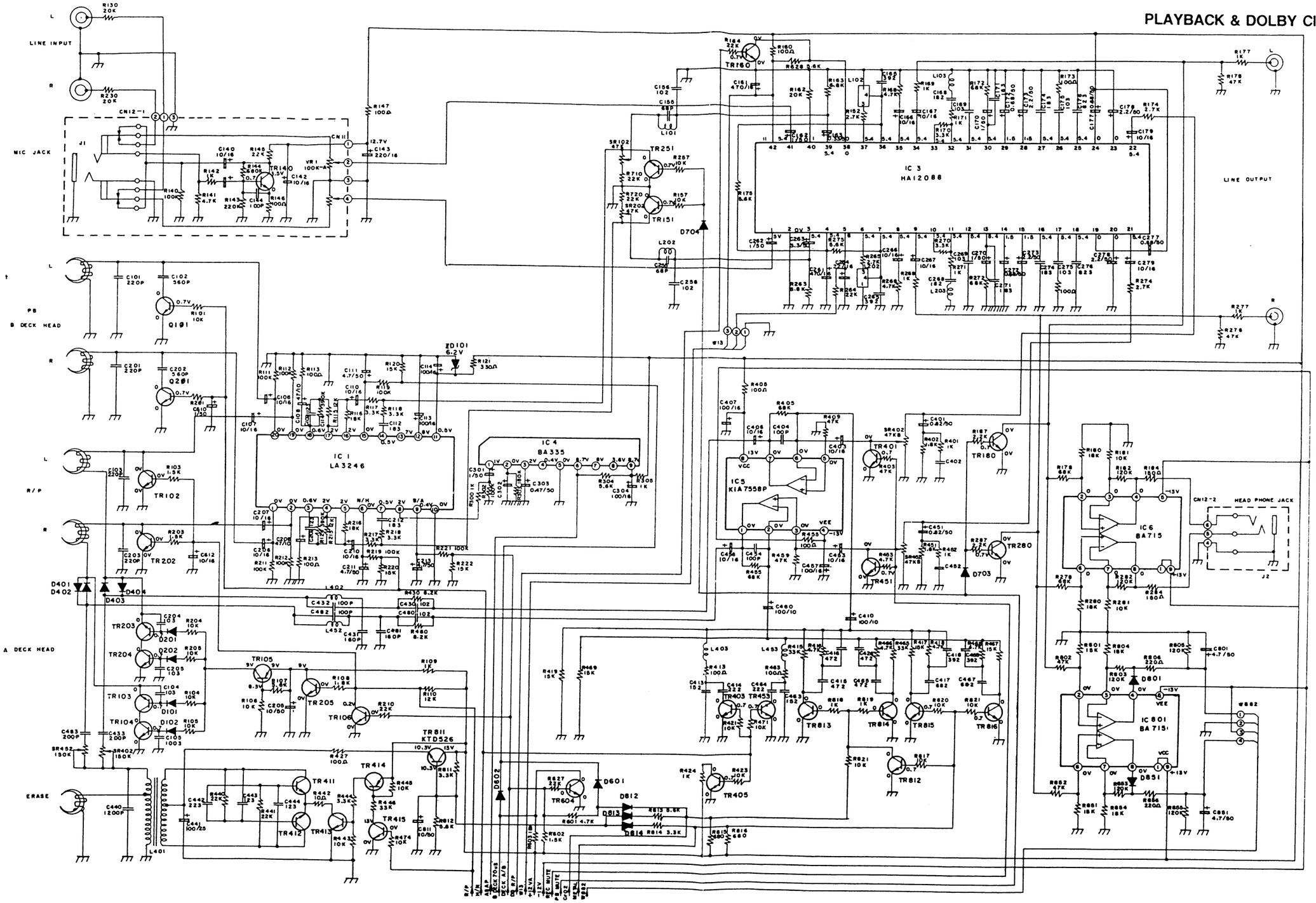
WIRING DIAGRAM



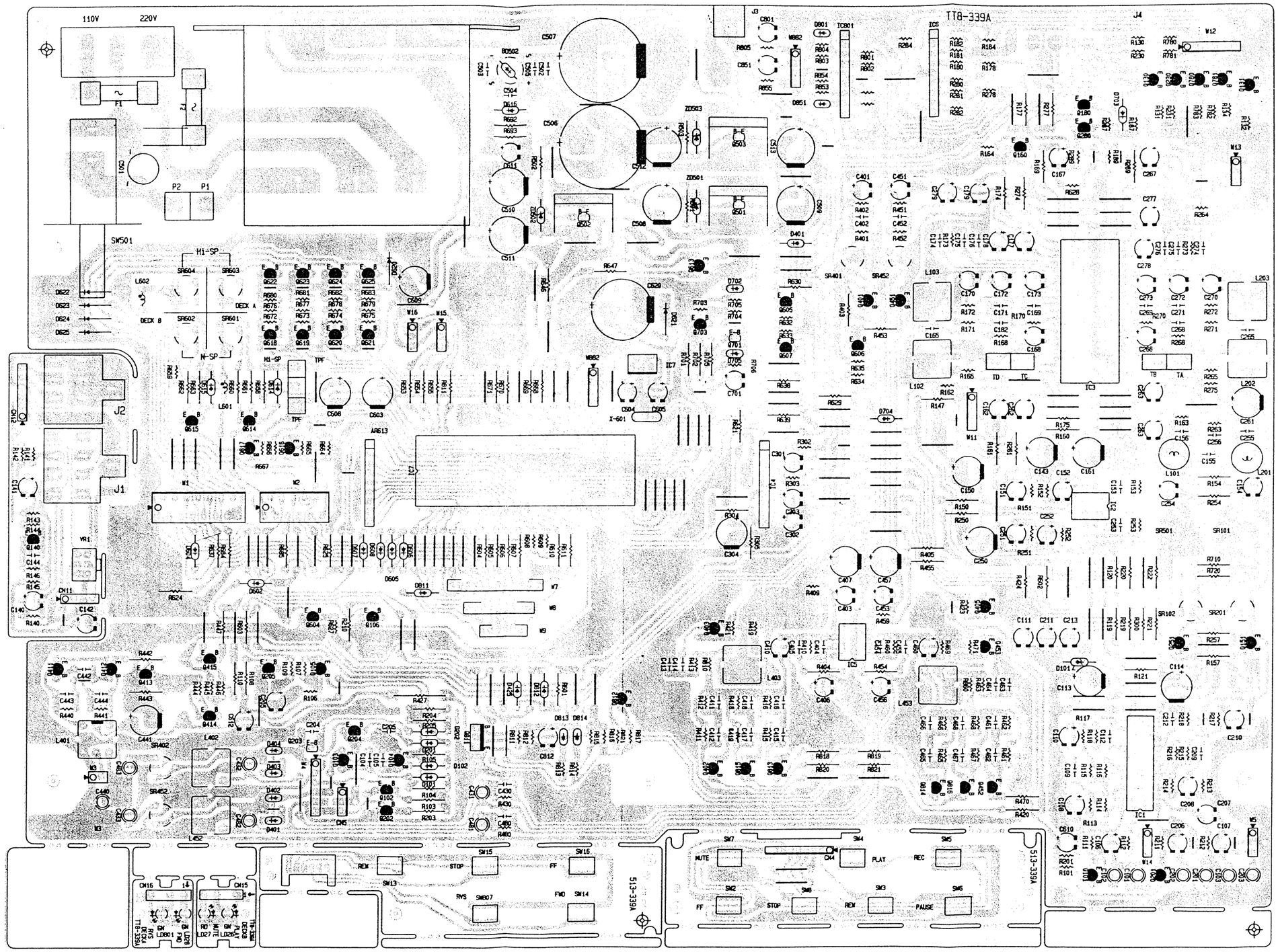
• μ-COM & POWER CIRCUIT



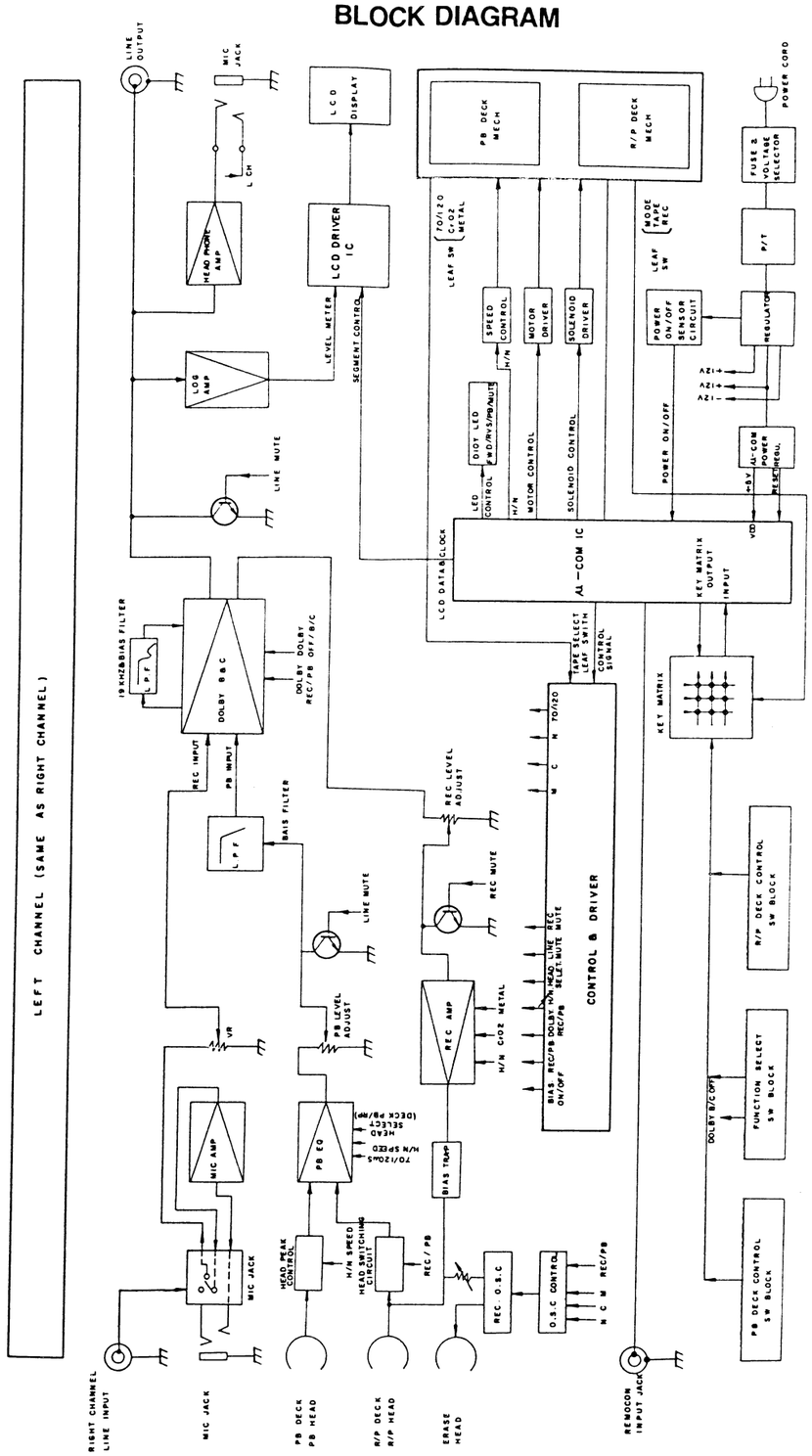
PLAYBACK & DOLBY CIRCUIT



• MAIN P.C. BOARD

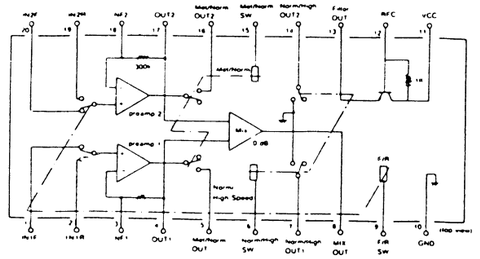


BLOCK DIAGRAM

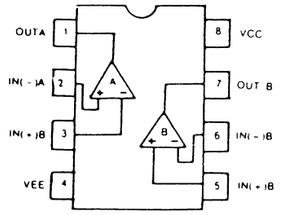


IC EQUIVALENT CIRCUIT

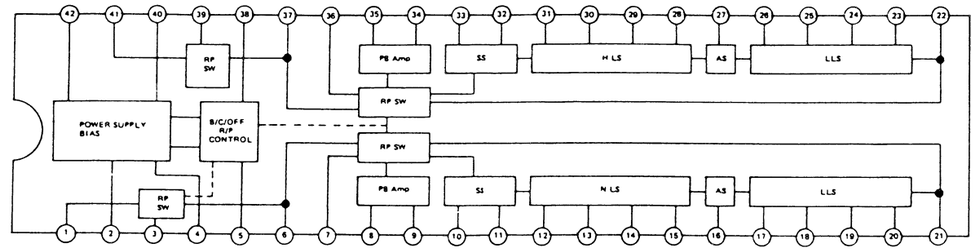
IC1 LA3246 (Pre Amp)



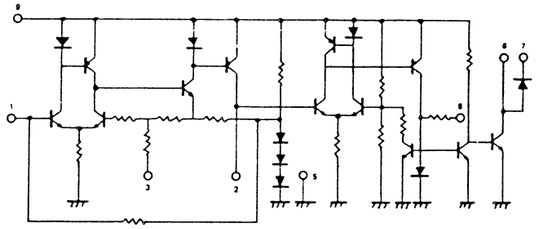
IC5 KIA75558P (Dual OP Amp)



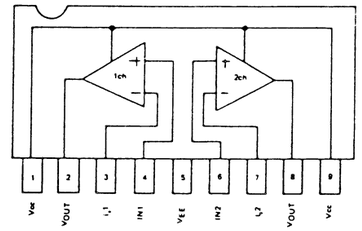
IC3 HA12088ANT (Dolby-B)



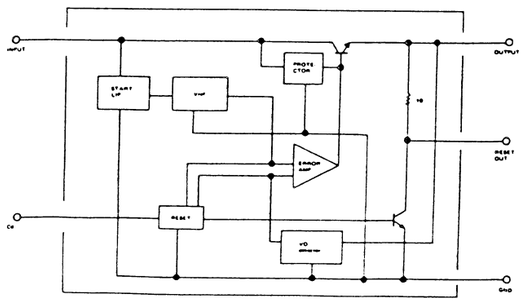
IC4 BA335 (APSS)



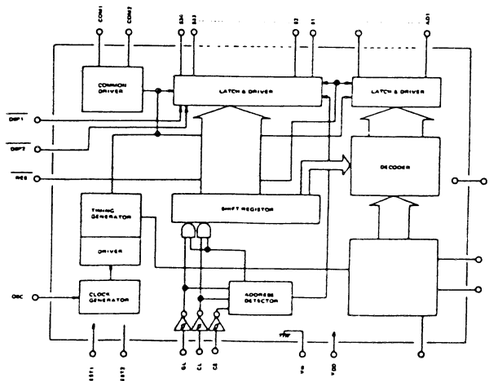
IC6, 801 BA715 (Dual OP Amp)

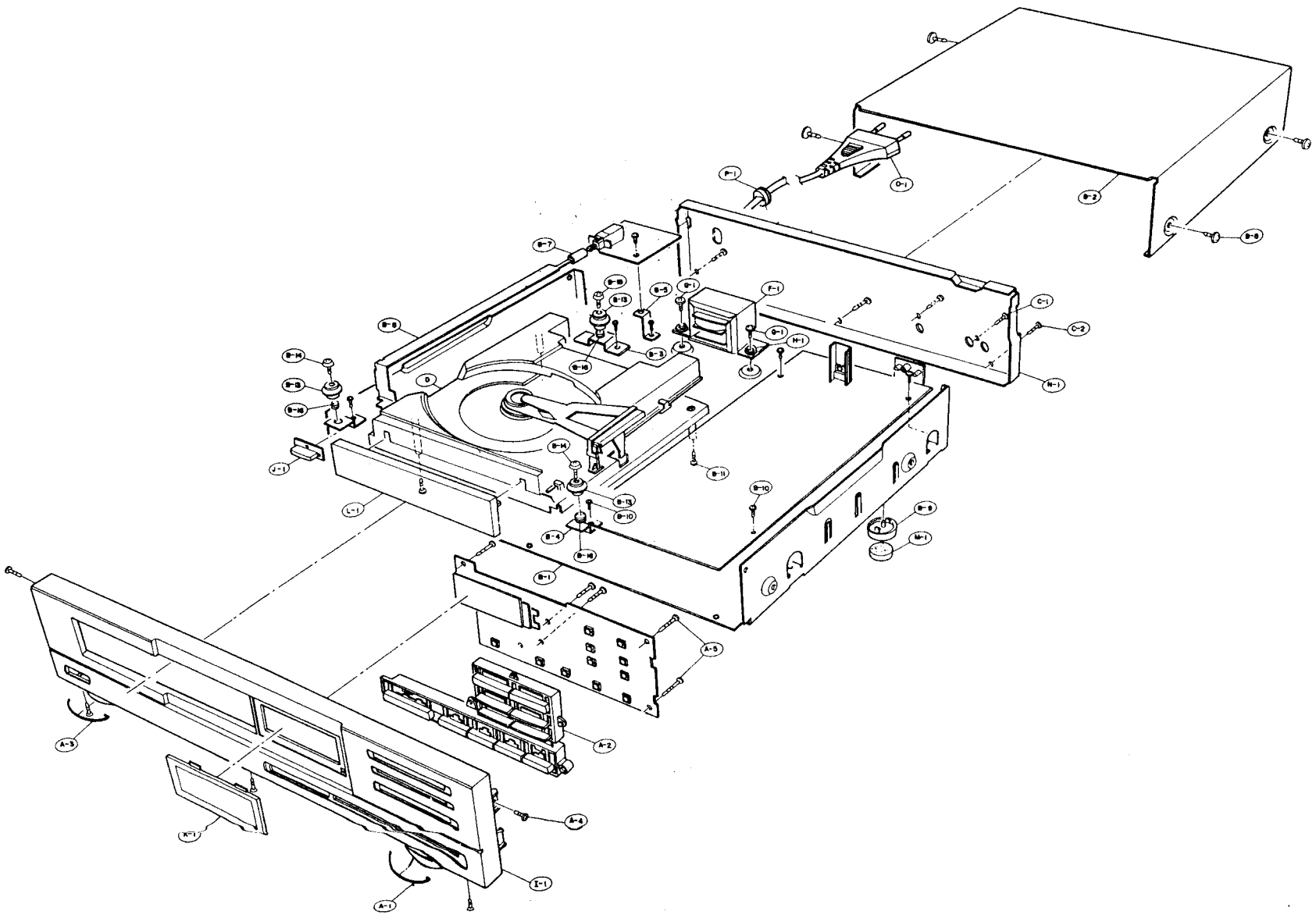


IC7 L78LR05 (Voltage Regulator)

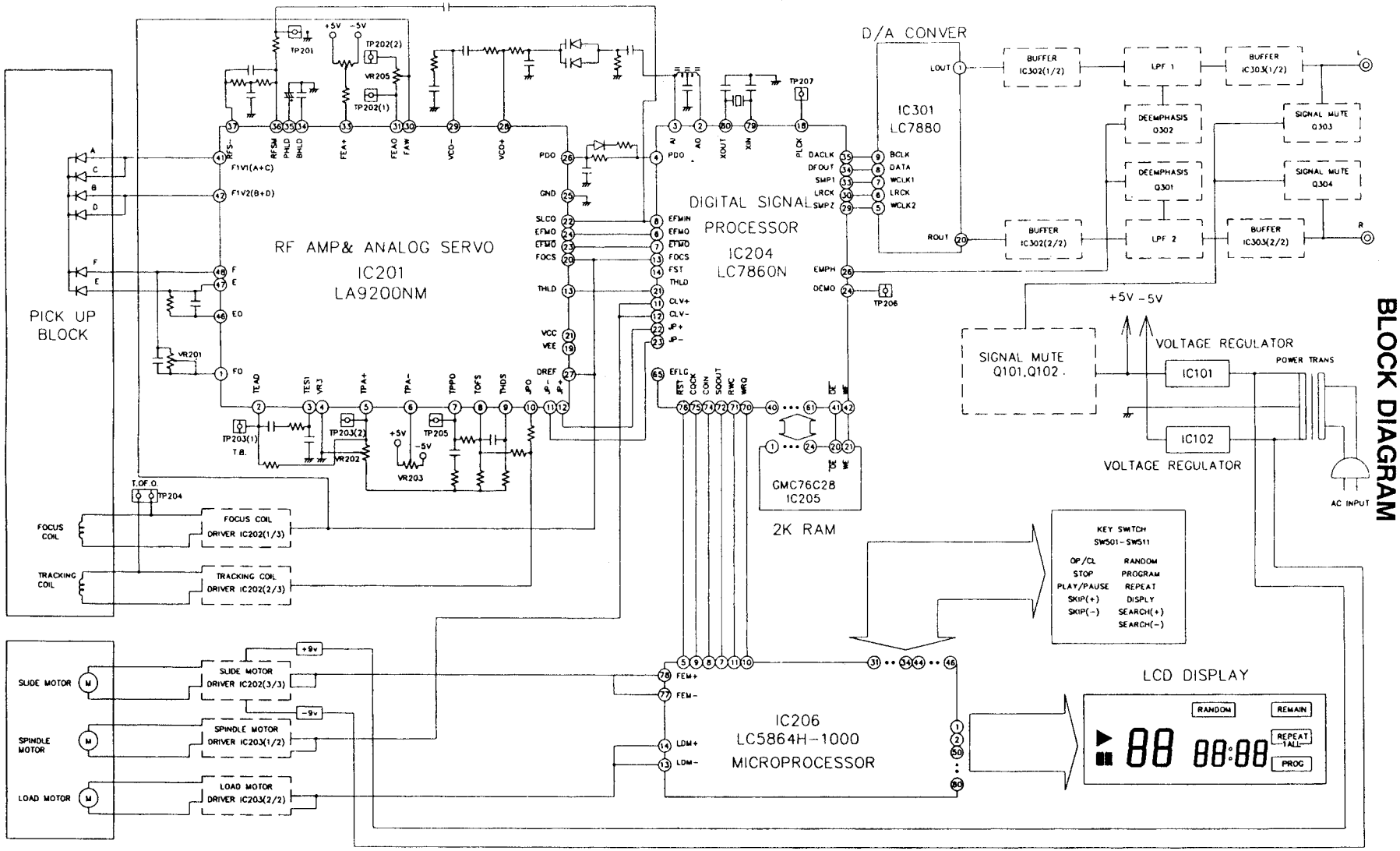


IC881 LC7583 (LCD Drive)




B-7
B-18
B-13
B-5
D-1
F-1
C-1
C-2
B-1
H-1
N-1
B-16
B-15
B-16
B-2
D
B-14
J-1
B-11
L-1
B-14
B-13
B-10
B-10
B-4
B-12
B-9
M-1
B-1
A-3
A-2
A-4
K-1
I-1
A-1
P-1
O-1
B-2
B-8

BLOCK DIAGRAM



SAFETY PRECAUTIONS

CAUTION FOR HANDLING THE OPTICAL PICK-UP

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, ect. on clothing and the human body. So, when hadling a MLP-9, the procedure for grounding as follows is required to prevent demage caused by static electricity.

① Grounding For Human Body.
Be sure to put on a wrist-strap for grounding (with impedance lower than 10⁶Ω) whose other end is grounded. the strap works to drain away the static electricity build-up on the human body.

② Grounding For The Work Table.
Be sure to lay on the table a conductive sheet (with impedance lower than 10⁶Ω) such as a sheet of copper, which is grounded.

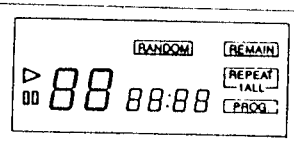
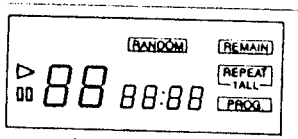
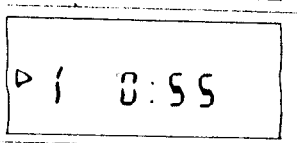
③ As static electricity build-up on clothes is not drained away, be careful not to let your clothes touch the pick-up.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the protection affoded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, ect. Replacement parts which have these special safety characteristics are identified in this manual, electrical components having such features are identified by a ⚠ in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire or other hazards.

TEST MODE

Short-circuit TP206 on the main P.C.board.

NO.	BUTTON	DISPLAY	OPERATION
1	POWER		• All digits on the LCD display ON. • All servo OFF. • Test stop mode.
2	PLAY		• Focus search only. → Pick-up objective lense UP-DOWN. • Laser ON.
3	STOP		• Test play mode. • Set will be into play mode automatically. • OPEN/CLOSE, SKIP +/– Button available in this mode.

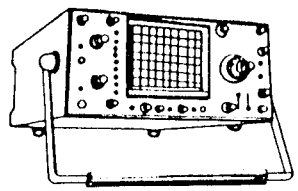
NOTE: In order to release test mode, turn power off and then open-circuit TP206.

ADJUSTMENTS

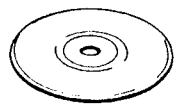
This compact disc player has been aligned at the factory and normally will not require further adjustment. As a result, it is not recommended that any attempt is made to modificate any circuit. If any parts are replaced or if anyone tampers will the adjustments, realignment may be necessary.

1. METER AND JIG FOR ADJUSTMENT

1-1. Oscilloscope

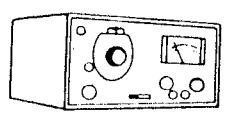


1-2. Test disc
(Sony type 4-YEDS18)

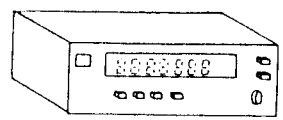


1-3. Voltmeter

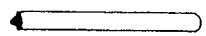
1-4. Low frequency oscillator
(A.F.OSC-600Ωoutput inpedance)



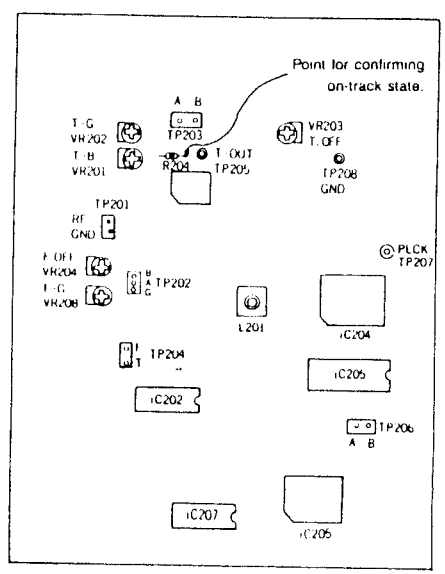
1-5. Digital frequency counter



1-6. Alignment tool for adjusting diffraction grating

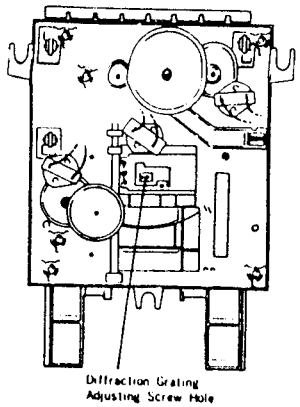


2. TEST AND ADJUSTMENT POINTS

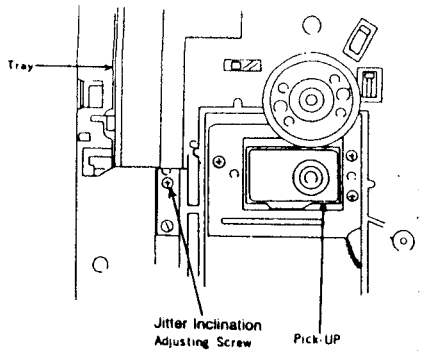


Main P.C. Board View

3. ADJUSTING SCREW LAYOUT FOR CD PLAYER



CDP Mechanism (Bottom View)

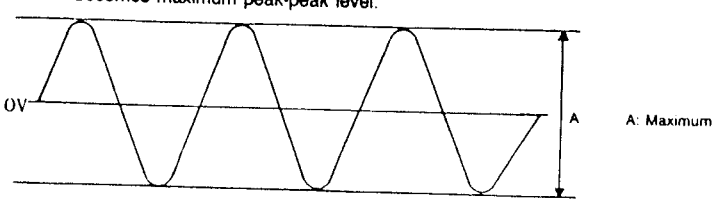


CDP Mechanism (Top View Around Pick-UP)

4. PICK-UP DIFFRACTION GRATING & CDP MECHANICAL DECK ADJUSTMENT

NOTE: It is necessary to adjust pick-up grating & mechanical deck only after exchanging pick-up. So, except the case of exchanging pick-up, you don't need to adjust pick-up & mechanical deck.

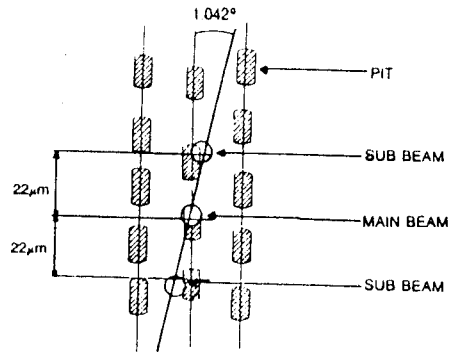
1) Adjustment of Diffraction Grating
   (1) In the test mode, power-on.
   (2) Insert test disc with open/close key.
   (3) Press stop key, set will be in test play mode.
   (4) Connect oscilloscope to TP203 (B)and TP (GND).
   (5) Short-circuit TP205 (T. OUT) and TP (GND).
   (6) Monitoring oscilloscope, rotate diffraction grating screw with the alignment tool (special driver) until T.E. waveform becomes maximum peak-peak level.



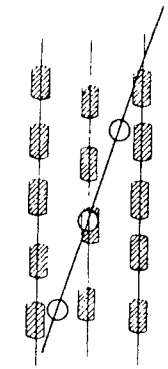
T.E. (Tracking Error) waveform

(7) When you adjust, be careful not to turn the diffraction grating screw too much.
There are 2 points where the T.E. waveform is maximized while tuning the diffraction grating once fully (360°). The servo system works at one of them.

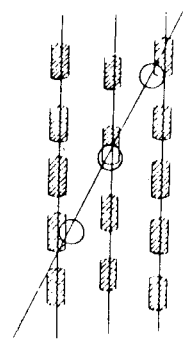
(8) After adjusting diffraction, you have to confirm whether two sub beams are on the same track with main beam or not.



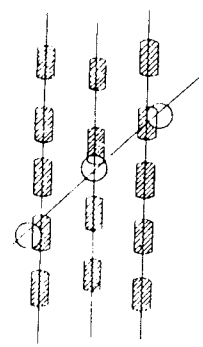
(A) Sub beams on the same track with main beam.
→ Normal condition



(B) Two sub beams are on mirror → In this case, the amplitude of T.E. waveform will be zero.
The set will not work.



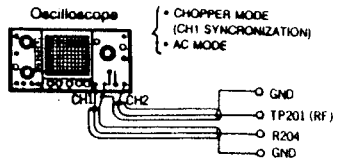
(C) Two sub beams are on another track each other.
→ In this case, you can not see normal HF signal.
The set will not work.



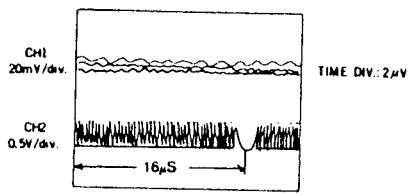
(D) Two sub beams are on another track each other.
→ In this case, you can see normal HF signal, and can see that T.E. waveform becomes maximum peak-peak level.
The set will work, but this state is not.

In the figure, you can distinguish the condition of (B) & (C) from the normal condition(A). Because in the case of (B) & (C), the set will not work. But it's not easy to distinguish the condition of (A) from (D). So, you have to do below check procedure.

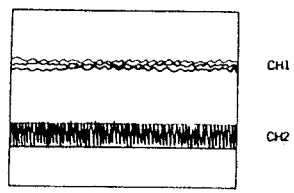
① Put unit into play mode with test disc (YEDS-18)
② Connect CH1 of oscilloscope to R204 (pin① of IC201: refer to adjustment point figure) and GND. Connect CH2 of oscilloscope to TP201(RF) and GND. Set oscilloscope chopper mode & AC mode, syncronize oscilloscope to CH1.



③ Confirm there is the syncronization point of RF signal on oscilloscope. If not, readjust diffraction grating.

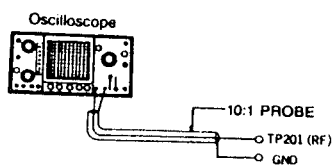


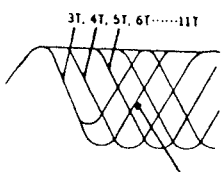
Sub beams on the same track → OK



Sub beams on another track each other → NG

2) Mechanical Deck Adjustment
① Place test disc (YEDS-18) on the turntable.
② Put unit into play mode on the track mumber 18.
③ Connect oscilloscope to TP201(RF) and (GND).
④ Adjust the jitter inclination screw until the signal waveform (eye pattern) becomes distint and clear.





This portion is referred to as the eye pattern.

Good waveform Abnormal waveform

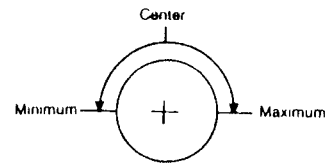
EYE PATTERN

The abnormal eye pattern has less distinct lines and smaller amplitude than that of the good waveform.

Adjust so that the good waveform is obtained.

5. ADJUSTMENT OF MAIN PCB

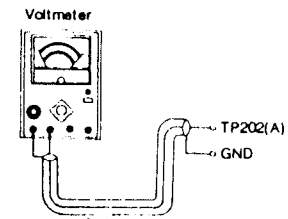
5-1. Presetting Of Potentiometer Volume On Main PCB



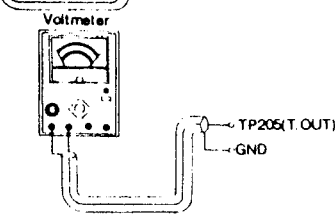
① Preset all potentiometer to center position.
② Before adjusting main PCB, put the unit into test mode.

5-2. Focus Offset Adjustment

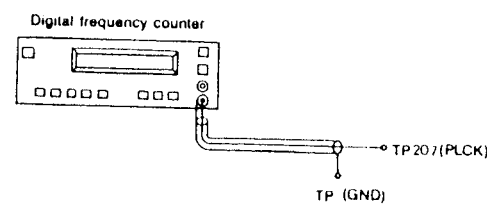
① Put unit into test stop mode.
② Connect digital voltmeter to TP202(A) and TP (GND).
③ Adjust VR204 so that voltmeter reading becomes DC OmV.



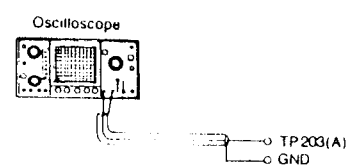
5-3 Tracking Offset Adjustment
① Put unit into test stop mode.
② Connect voltmetor to TP205(T. OUT) and TP (GND).
③ Adjust VR203 (T. OFF) so that voltmeter reading becomes DC-10mV.

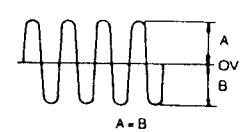


5-4 PLL Adjustment
① Put unit into test stop mode.
② Connect digital frequency counter to TP207 (PLCK) and TP (GND).
③ Adjust L201 so that digital frequency counter reading becomes 4.32MHz. (When adjusting L201, you had better use ceramic or plastic driver.)



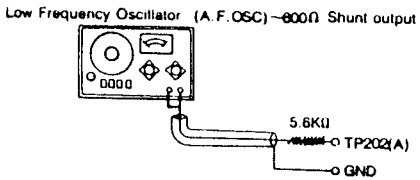
5-5. Tracking Balance Adjustment
① Put unit into test stop mode.
② Press stop key (test play mode).
③ Short-circuit TP205 (T. OUT) and TP (GND).
④ Connect oscilloscope to TP203(A) and TP (GND).
⑤ Adjust VR201 so that the amplitude above and below the zero DC level becomes equal (amplitude A = B).



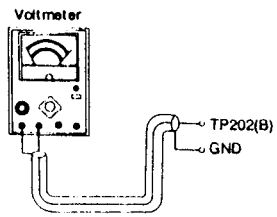


5-6. Focus Gain Adjustment (with audio frequency oscillator)

① Place test disc (YEDS-18) on the turntable.
② Put unit into play mode.
③ Inject 1kHz 4VRMS sine signal to TP202(A) through resistor 5.6kΩ



④ Connect voltmeter to TP202(B) and (GND).
⑤ Adjust VR205 (F.G) so that voltmeter reading becomes AC 600mVRMS.



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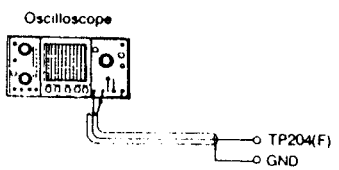
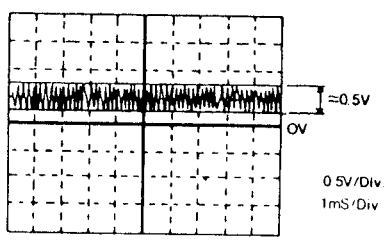
5-7. Focus Gain Adjustment (without audio frequency oscillator)

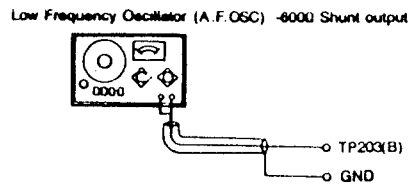
① Place test disc (TEDS-18) on the turntable.
② Put unit into play mode.
③ Connect oscilloscope to TP204(F) and TP (GND).
Adjust VR205(F.G) so that the waveform on the oscilloscope becomes like below.

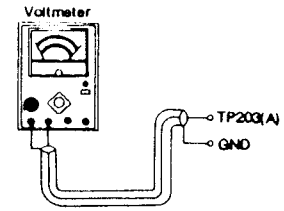




5-8. Tracking Gain Adjustment (with audio frequency oscillator)

① Place test disc (TEDS-18) on the turntable.
② Put unit into playmode.
③ Inject 1kHz 4VRMS sign signal to TP203(B)

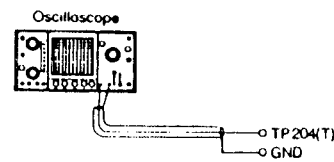


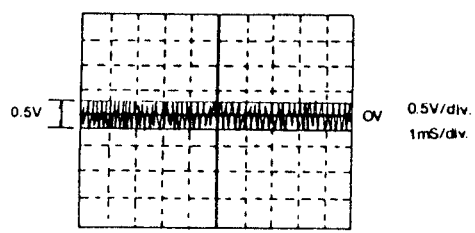


④ Connect voltmeter to TP203(A) and TP (GND).
⑤ Adjust VR202 (T.G) so that voltmeter reading becomes AC 600mVRMS.

5-9. Tracking Gain Adjustment (without frequency oscillator)

① Place the test disc (YEDS-18) on the turntable.
② Put unit into play mode.
③ Connect oscilloscope to TP204(T) and TP (GND).
Adjust VR202 (T.G) so that the waveform on the oscilloscope becomes like below.





5-10. Focus & Tracking Offset Re-adjustment

You must re-adjust foucs & tracking affset after adjusting focus & tracking gain in the same manner with 6-2 & 6-3.

PIN DESCRIPTION OF LC7860 (IC204) & LC7880 (IC301)

1. IC204 (LC7860, Digital Signal Processor)

Pin No.	Pin name	I/O	Function
1	TEST1	I	For LSI test. This is disconnected in normal operations.
2	A_O	O	Compose VCO with an LC resonance circuit connected between A_I and A_O. (8.6436 MHz) P_{DO} is a phase output with the EFM signal, and set so that frequency rises in the + mode.
3	A_I	I	
4	P_{DO}	O	
5	V_{SS}	—	GND
6	EFMO	O	Input the HF signals of 1 to 2 V_{PP} to EFMIN. EFM signals each having an inversed phase to the other are output from EFMO and $\overline{EFMO}$ through the amplitude limiter. These signals are used for slice level control.
7	$\overline{EFMO}$	O	
8	EFMIN	I	
9	TEST2	I	For LSI test. This is disconnected in normal operations.
10	V_{DD}	—	+ 5 V
11	CLV +	O	For disc motor control output.
12	CLV –	O	
13	FOCS	O	Turn off the focus servo while FOCS is set to H. FST lowers the lense when in the L state, and rises it gradually when in the H state. When $\overline{FZD}$ is generated, FOCS is reset, retrieving the focus.
14	FST	O	
15	$\overline{FZD}$	I	
16	HFL	I	A kick pulse, JP + , or JP – is generated according to a track command which specifies the number of tracks to be jumped (1, 4, 16, or 64).
17	TES	I	
18	FSEQ/PCK	O	4.3218 MHz PCK monitor terminal. This is set to H when SYNC detected from the EFM signal coincides with SYNC on the counter while DEMO is set to H.
19	TOFF	O	A kick pulse, JP + , or JP – is generated according to a track command which specifies the number of tracks to be jumped (1, 4, 16, or 64).
20	TGL	O	
21	THLD	O	
22	JP +	O	
23	JP –	O	
24	DEMO	I	This pin is used for adjustment of the set (sound adjustment).
25	TEST3	I	For LSI test. This is disconnected in normal operations.
26	EMPH	O	De-emphasis is needed when this pin is set to H.
27	DFOFF	I	Digital filter ON/OFF switch. When this pin is set to H, the digital filter function is diactivated.
28	DSPOFF	I	For LSI test. This is set to L in normal operations.
29	SMP2	O	Signal output to DAC, L/R switching or sample hold signal.
30	LRCLK	O	
31	V_{DD}	—	+ 5 V
32	SMP3	O	Signal output to DAC, L/R switching or sample hold signal.
33	SMP1	O	
34	DFOUT	O	
35	DACLK	O	Signal output to DAC, L/R switching or sample hold signal.
36	DFIN	I/O	Ooutput signals corresponding to CD ROM. Synchronous signals corresponding to CD ROM.
37	LRSY	O	
38	MSBF	I	Signal output to DAC, L/R switching or sample hold signal.
39	CK2	O	2.1609 MHz
40	AD10	O	RAM address output
41	OE	O	Output mode when $\overline{WE}$ = L, and input mode when $\overline{WE}$ = H. $\overline{OE}$ is used to control input and output.
42	$\overline{WE}$	O	
43	AD9	O	
44	AD8	O	
45	AD7	O	RAM address output
46	AD6	O	
47	AD5	O	
48	AD4	O	

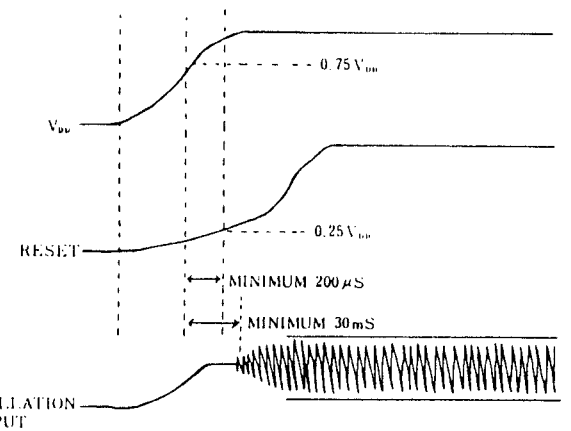
Pin No.	Pin name	I/O	Function
49	AD3	O	RAM address output
50	AD2	O	
51	AD1	O	
52	AD0	O	
53	DB7	I/O	DB7 to DB0: Connect to the RAM data pins.
54	DB6	I/O	
55	DB5	I/O	
56	V_{SS}	—	GND
57	DB4	I/O	DB7 to DB0: Connect to the RAM data pins.
58	DB3	I/O	
59	DB2	I/O	
60	DB1	I/O	
61	DB0	I/O	
62	TEST4	I	For LSI test. This is disconnected in normal operations.
63	TEST5	I	
64	I_{OFF}	I	Corresponding to CD ROM. When this pin is set to H, interpolation and previous value holding are not performed.
65	EFLG	O	C1 and C2 (single and double) correction monitoring.
66	PW	O	PWSY finds a change in SYNC, combined sub and main, from H to L, externally, and sends clocks to SBCK eight times to read subcode P, Q, R, S, T, U, V, or W.
67	PWSY	O	
68	SBCK	I	
69	FSX	O	7.35 KHz synchronous signal output.
70	WRQ	O	WRQ is set to H when the subcode Q data is passed the CR check. This is detected from outside, and $\overline{CQCK}$ is transmitted to read data. If data is to be read with the LSB first, set M/L to L. Set RWC to H using a microcomputer, and send a command data synchronized with $\overline{CQCK}$.
71	RWC	I	
72	SQOUT	O	
73	V_{DD}	—	+ 5 V
74	COIN	I	
75	$\overline{CQCK}$	I	
76	$\overline{RES}$	I	Set to L first when the power is turned on.
77	H/L	I	
78	V_{SS}	—	GND
79	X_{IN}	I	8.6436 MHz crystal oscillator connection pins.
80	X_{OUT}	O	

2. IC301 (LC7880, D/A Converter)

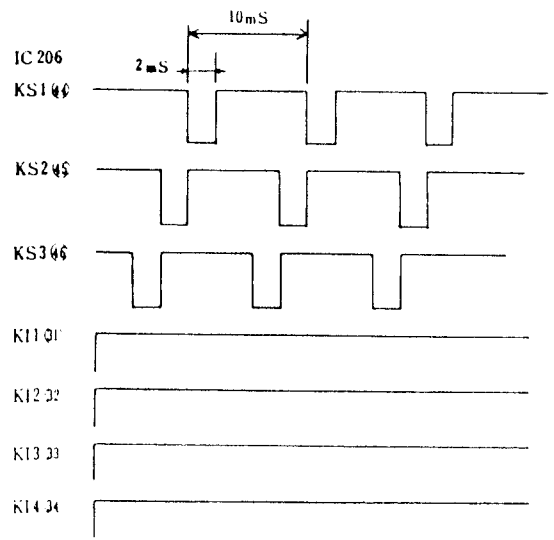
Pin No.	Name	Description
1	CH10UT	CH10UT output pin (R-ch output for LC7860)
2	VrefH	Reference voltage "H" input pin
3	NC	No connection
4	VDD	+5V power supply voltage
5	WCLK2	Word clock input #2. When IF is "L" level and WCLK2 goes LOW, an internal signal is generated that latches the data on the left digital audio channel. When IF is "H" level, WCLK2 must be "L" level.
6	LRCK	Left-right clock input. When "H" level, shows that the digital audio input is on the left-channel; when "L" level, on the right-channel.
7	WCLK1	Word clock input #1. When IF is "L" level and WCLK1 goes "L" level, an internal signal is generated that latches the data on the right digital audio channel. When IF is "H" level and WCLK1 goes "L" level, an internal signal is generated that latches the data on both the right and left digital audio channels.
8	DATA	Digital audio data input. When IF is "L" level, data is input in bit-serial format from the least significant bit (LSB). When IF is "L" level, data is input bit-serial format from the most significant bit (MSB).
9	BCLK	Bit clock input pin. Bit clock for reading in digital audio data in bit-serial format and the clock for the PWM DAC.
10	V_{DD}	+5V power supply voltage
11	TSTOUT	Test output, normally open.
12	TST1	Test input, normally grounded.
13	TST2	Test input, normally grounded.
14	IF	Interface toggle. Digital audio data is input LSB first when "L" level, and MSB when "H" level.
15	GND	Ground
16	VrefL	Reference voltage "L" level input
17	GND	Ground
18 & 19	NC	No connection
20	CH20UT	CH20UT output pin (L-ch output for LC7860)

TIMING CHART OF EACH PART

• RESET



• KEY TIMING CHART



• After power on each state until normal play (with disc)

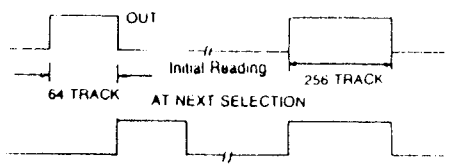
IC NO.	SIGNAL	PIN NO.	WAVEFORM
IC206	FM –	(17)	POWER ON
	FM +	(18)	
	LDSW	(12)	OFF ON
IC204	FOCS	(13)	
	FST	(14)	
IC202	F.A.	(3)	
IC201	DRF	(27)	
IC204	CLV +	(11)	
	CLV –	(12)	
	T. OFF	(19)	
	TGL	(20)	
	THLD	(21)	
IC201	KP ±	(10)	

• SLIDE

(IC206)

FM + (7) OUTER DIRECTION

FM – (14) INNER DIRECTION



• FOCUS

(IC204) (14) FST

(13) FOCS

(15) FZD

(IC201) (27) DRF

(31) FEAO

(IC202) (3) FOCUS DRIVE

• DISC MOTOR

(IC204) (11) CLV +

(12) CLV –

• TRACKING MODE (NORMAL)

(IC201) (19) TOFF

(20) TGL

(21) THLD

(22) JP +

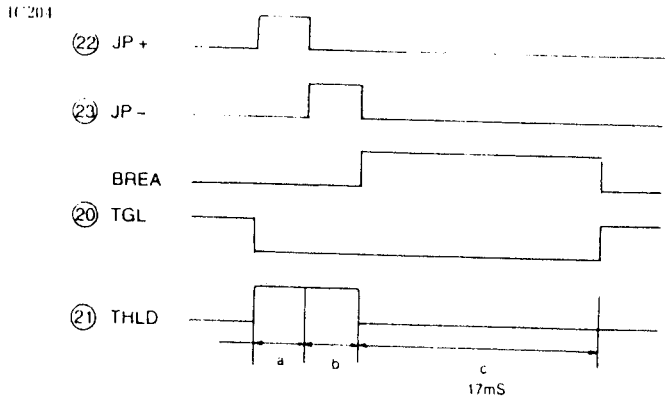
(23) JP –

(2) TEAO

(7) T. OFF

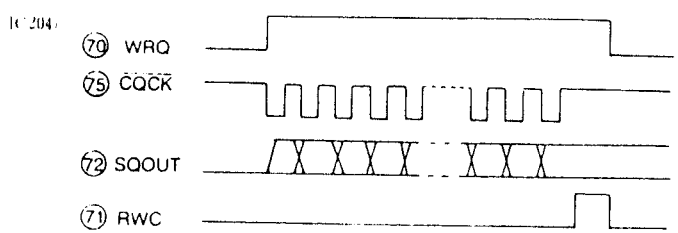
(IC202) (6) TRACKING DRIVE

• TRACKING (At Selection)

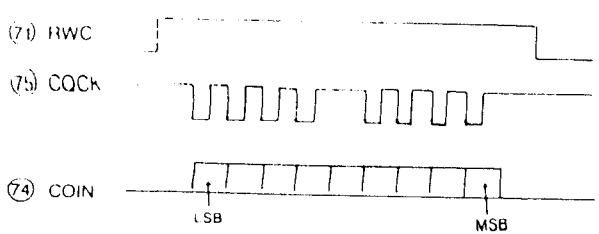


COMMAND	a	b	c
1 TRACK JUMP IN (OUT) #1	233 μS	233 μS	17 mS
1 TRACK JUMP IN (OUT) #2	0.5 TRACK JUMP PERIOD	233 μS	17 mS
4 TRACK JUMP IN (OUT)	2 PERIOD	466μS	17 mS
16 TRACK JUMP IN (OUT)	9 PERIOD	7 TRACK JUMP	17 mS
64 TRACK JUMP IN (OUT)	36 PERIOD	28 TRACK JUMP	17 mS
256 TRACK JUMP IN (OUT)	256 TRACK PASSAGE THLD → "H" STATE		

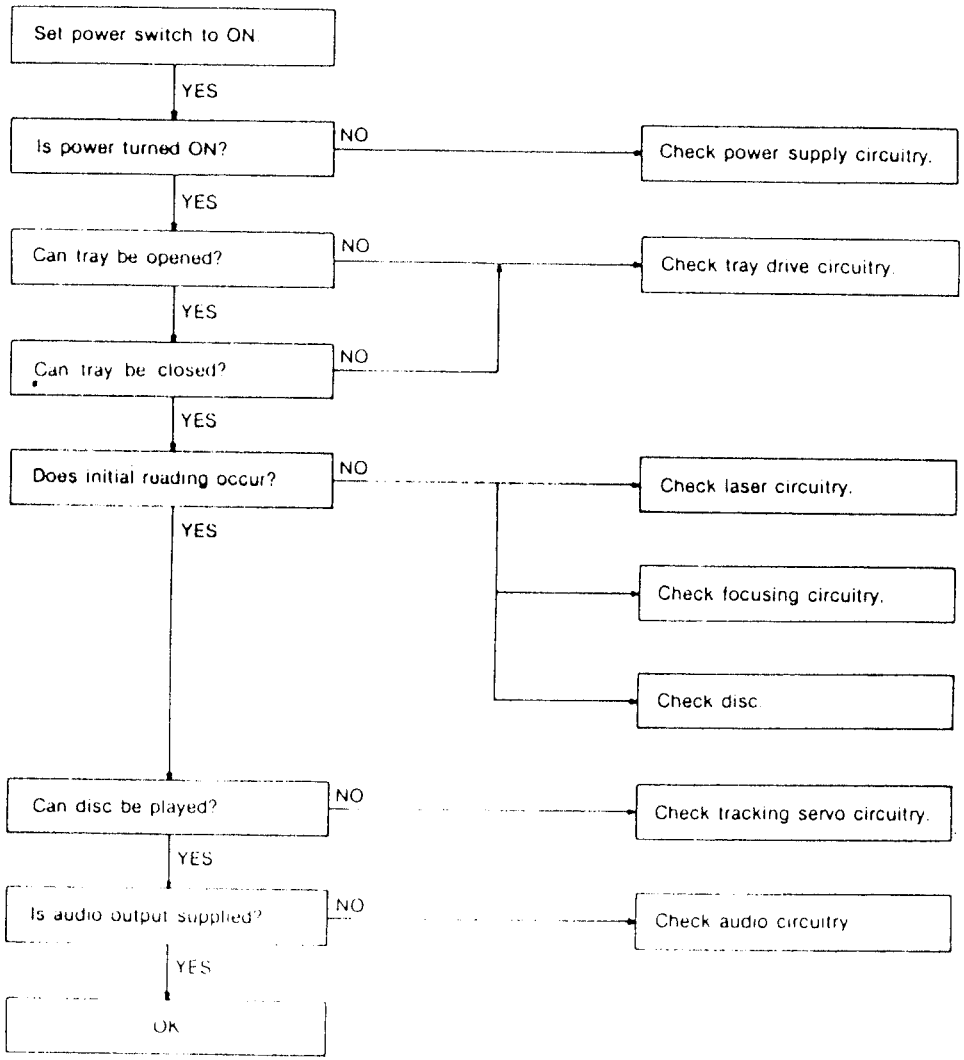
• SUB CODE OUTPUT



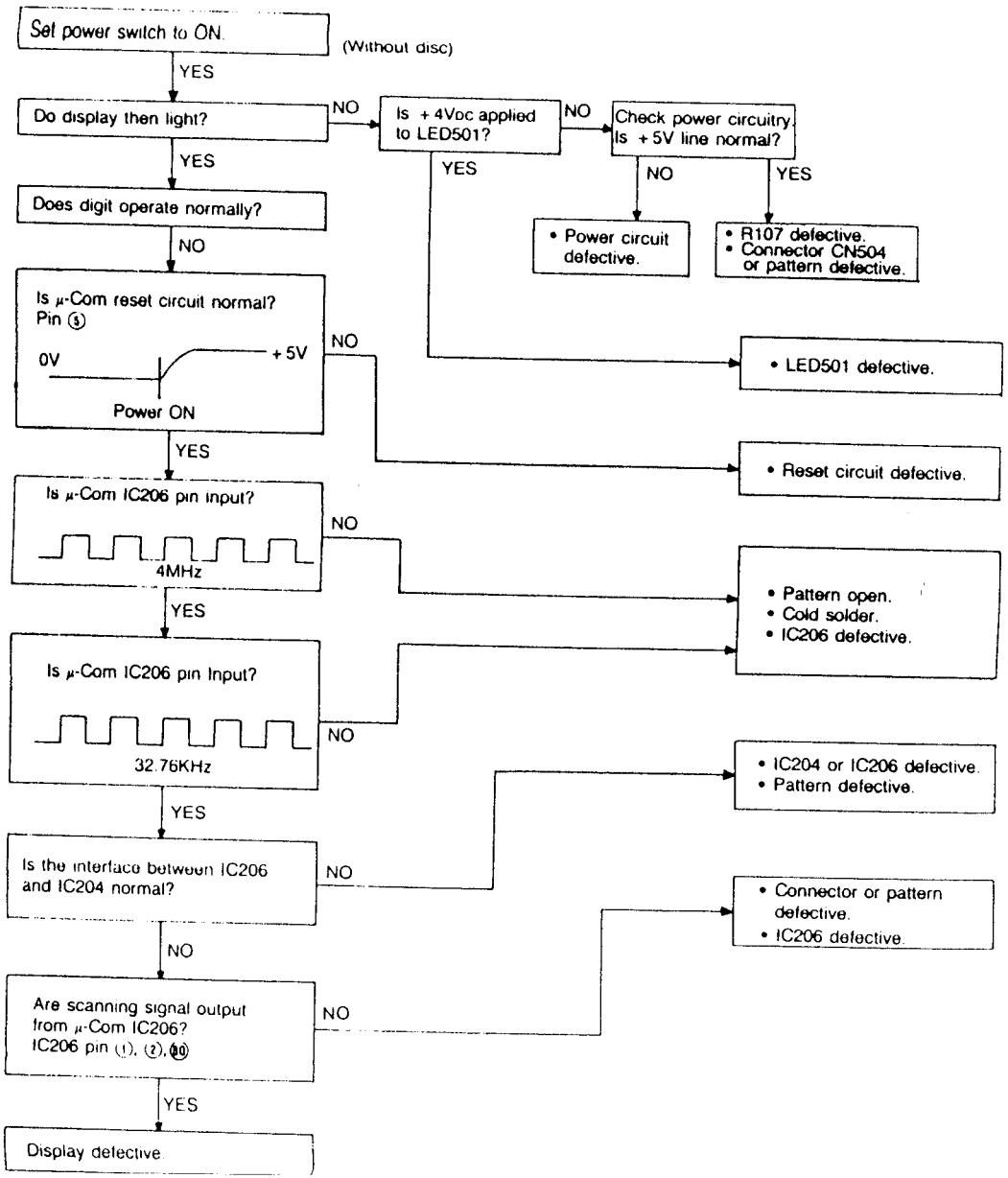
• SUB COMMAND INPUT



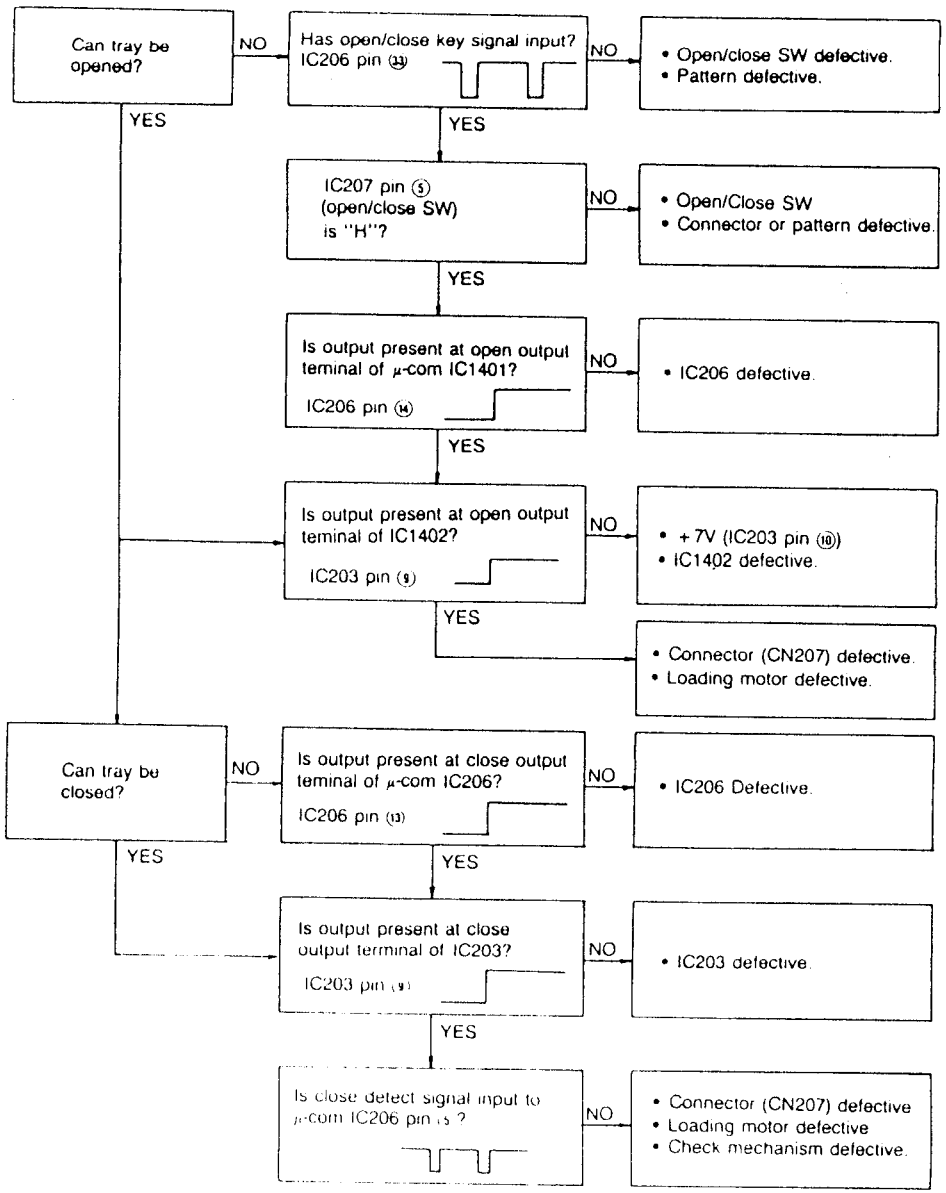
TROUBLESHOOTING GUIDE



(1) If display is not normal

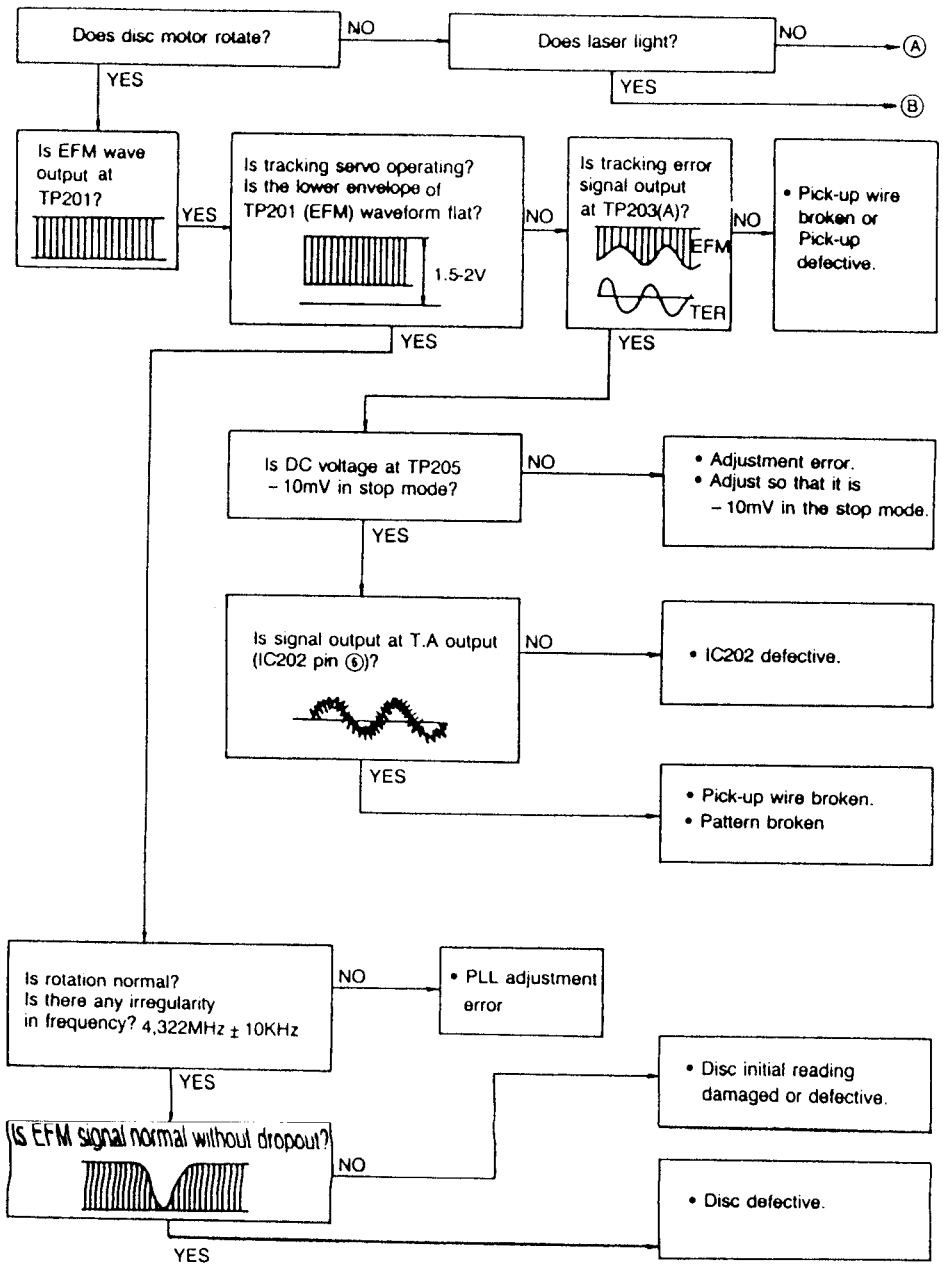


(2) If tray operation is not normal

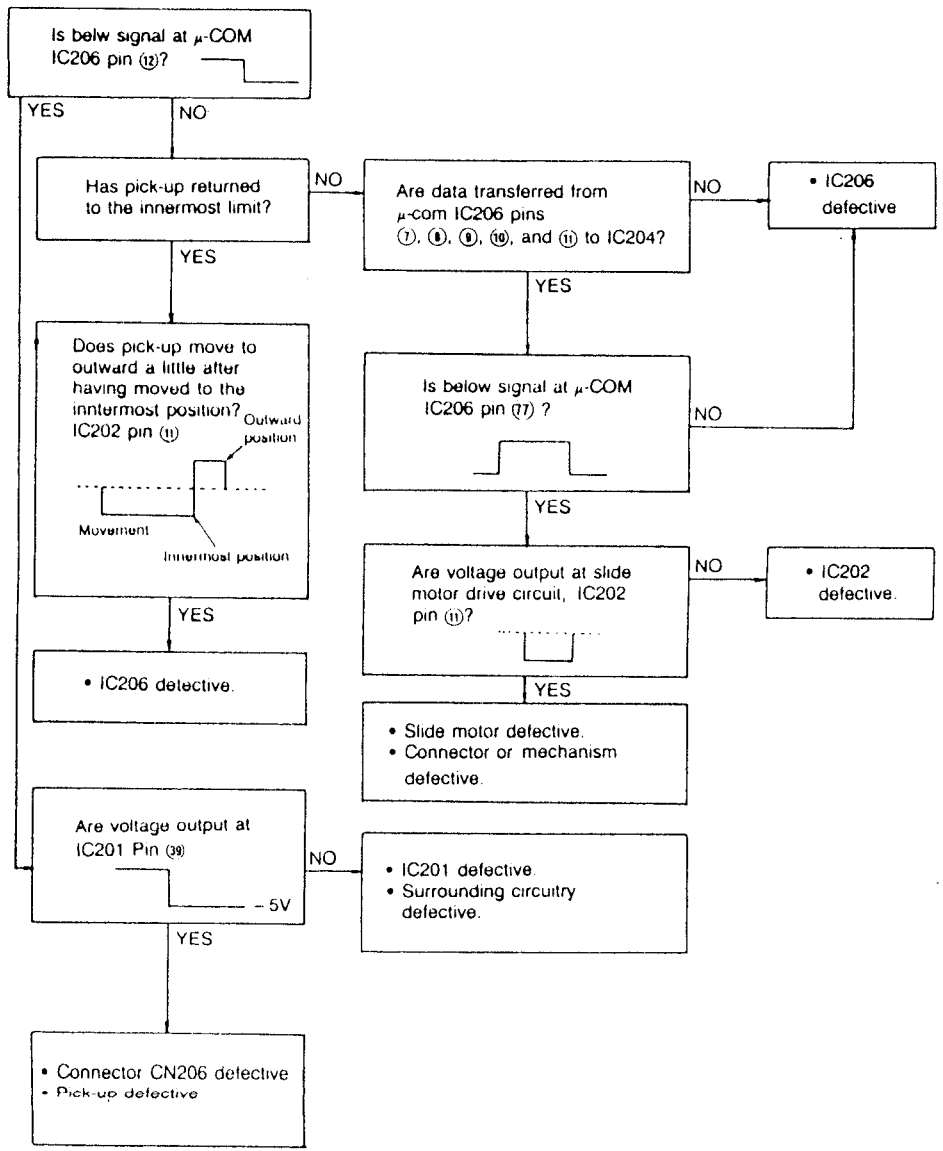


* If tray opens (closes) immediately after it was closed (opened), it is connecting CN207, assembling cabinet mechanism, connector or load SW or pattern defective

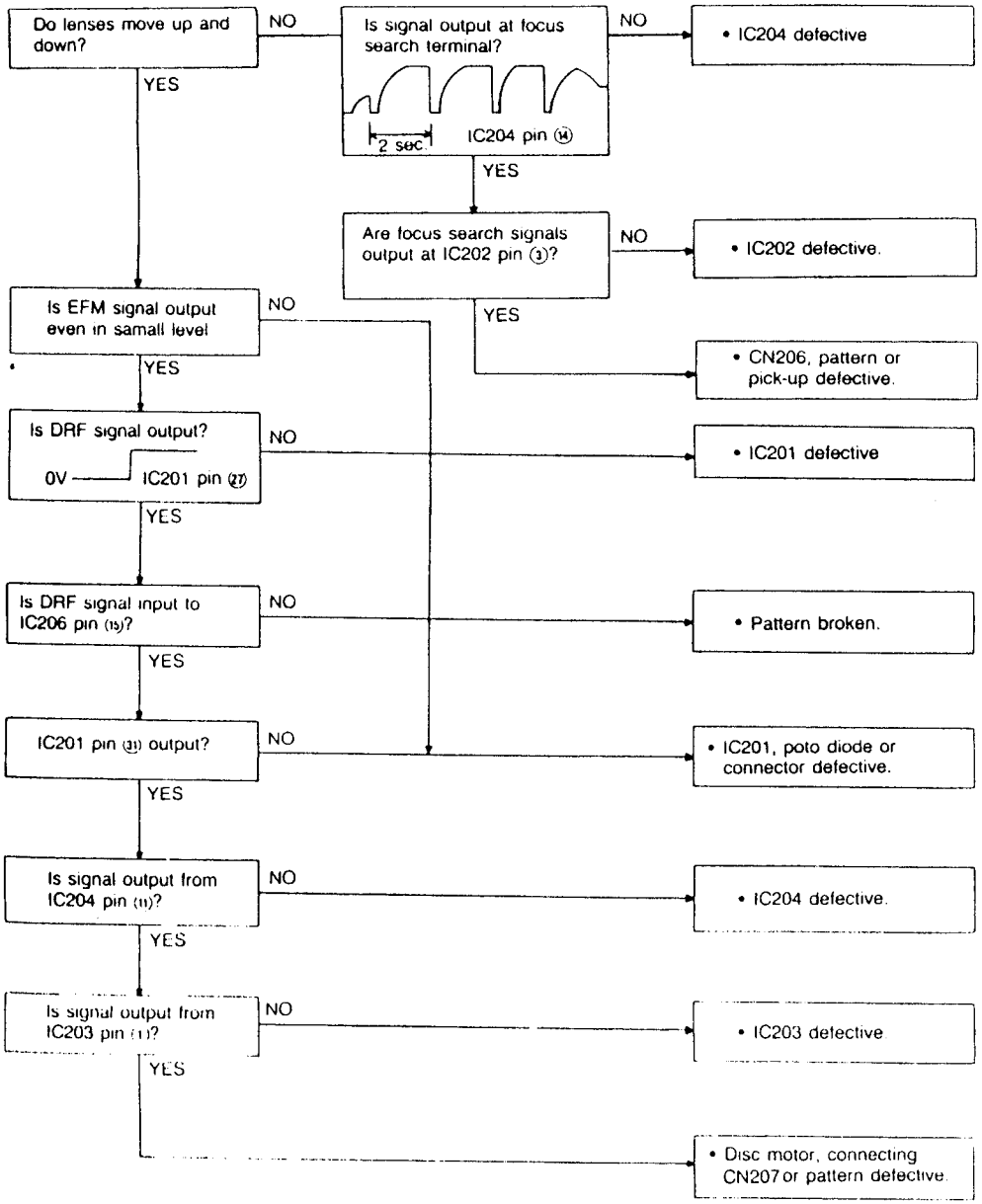
(3) If intial reading is not carried out



Ⓐ When laser does not light

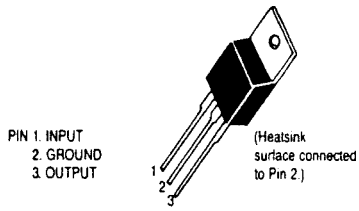


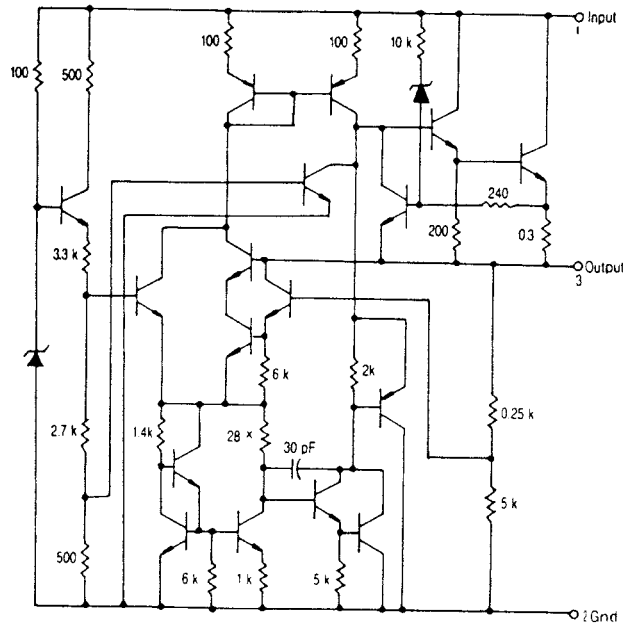
When laser lights



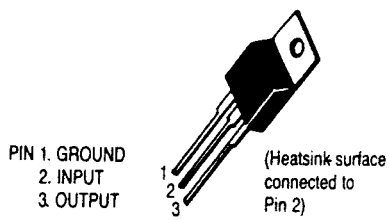
IC EQUIVALENT CIRCUITS

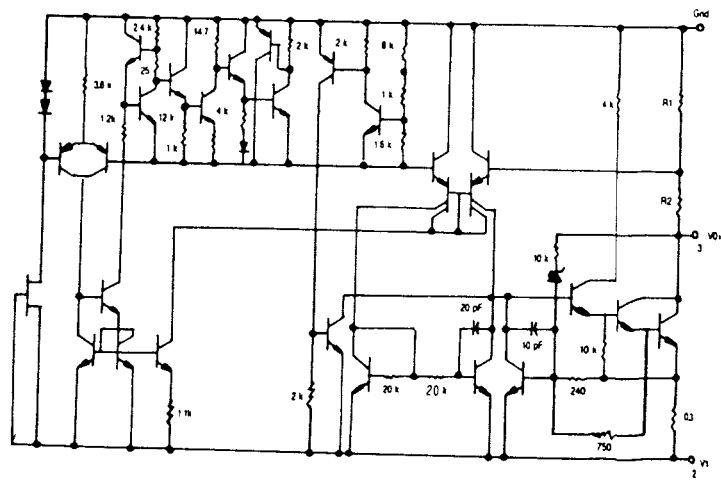
IC101 MC7805 (Voltage Regulator)





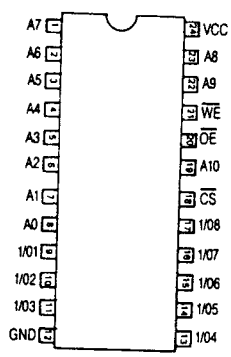
IC102 MC7905 (Voltage Regulator)

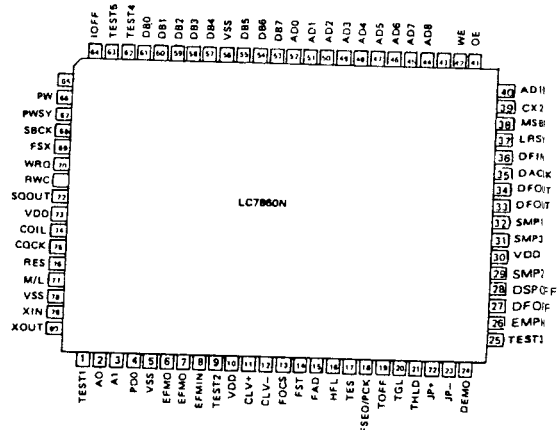




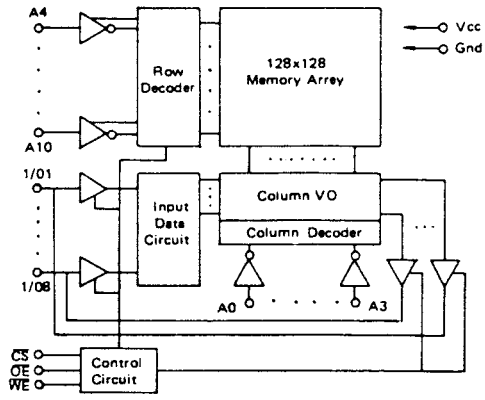
IC204 LC7860N (DSP)

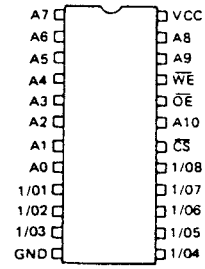
IC202 LA6520 (Power OP Amp)



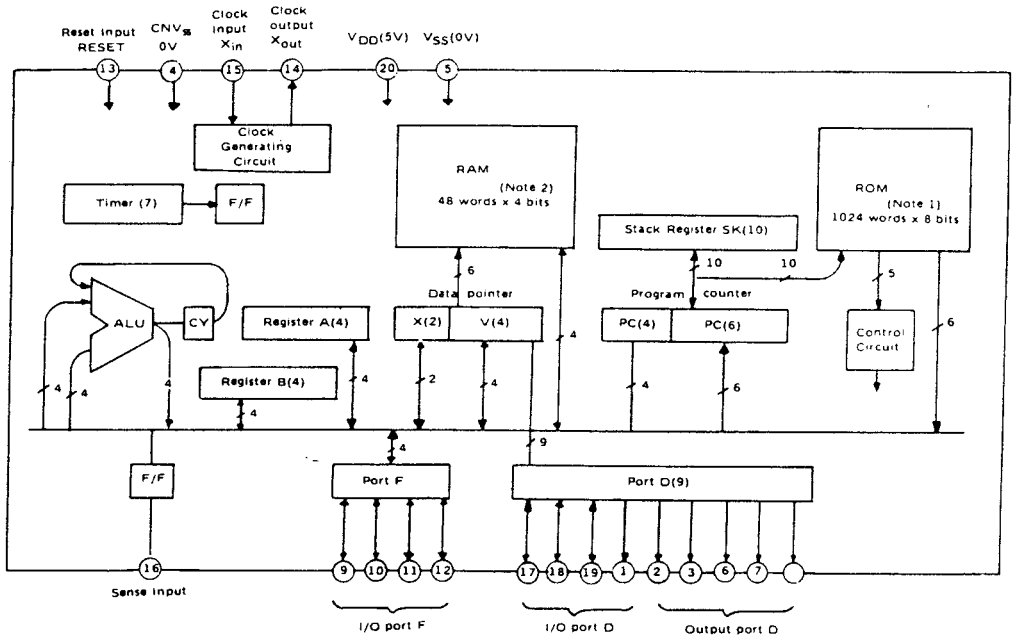


IC205 GM76C28-10(16K SRAM)

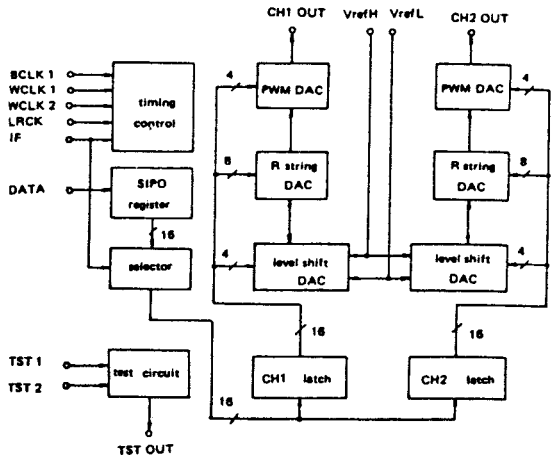




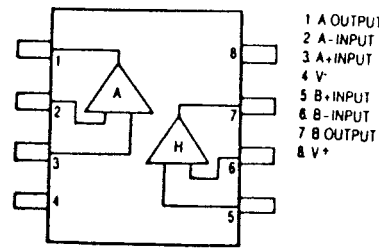
IC207 M50761-XXX (μ-COM Remote)



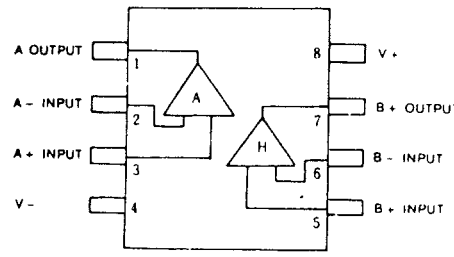
IC301 LC7880 (DAC)



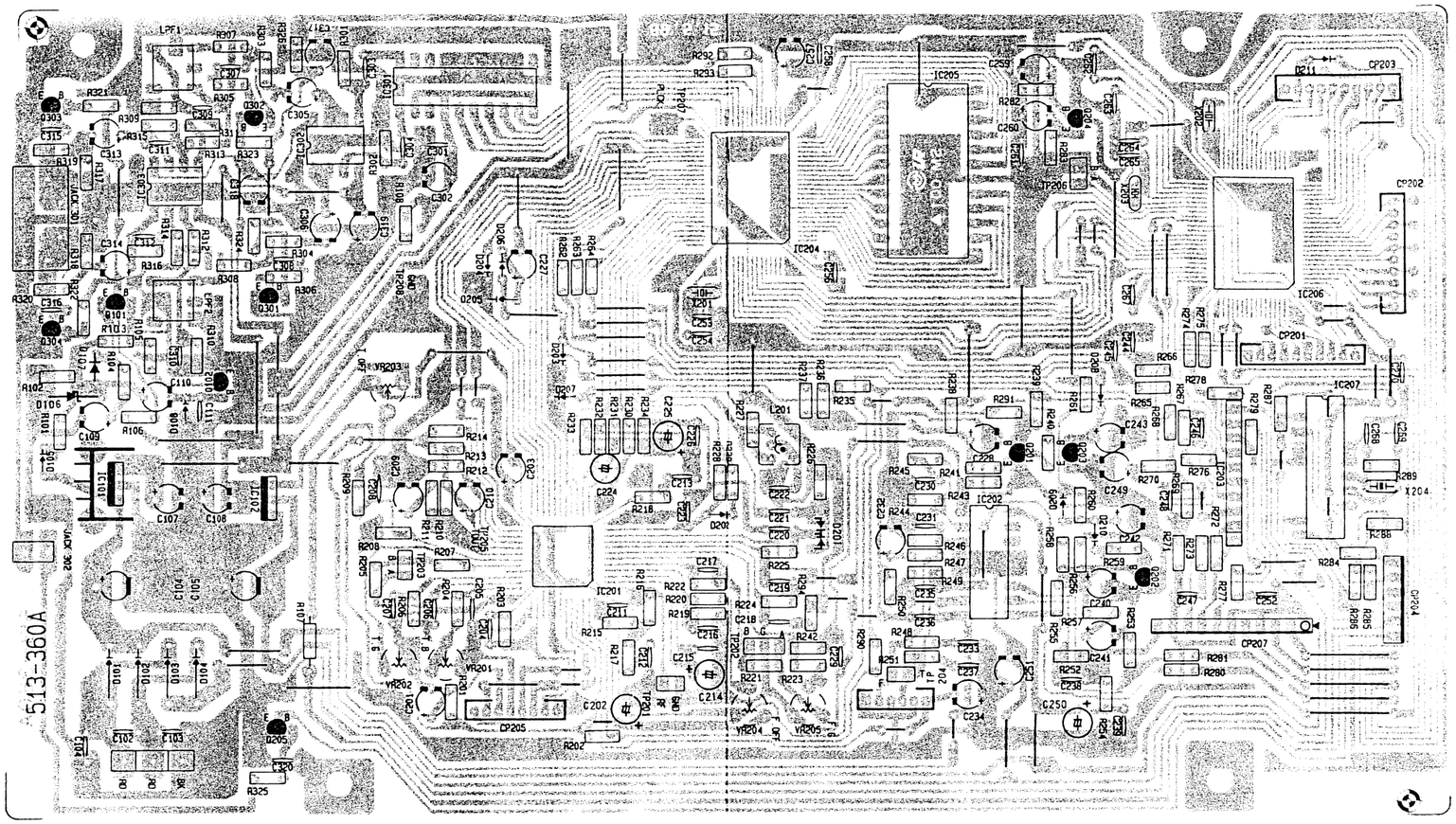
IC302 μPC4570 (Dual op Amp)



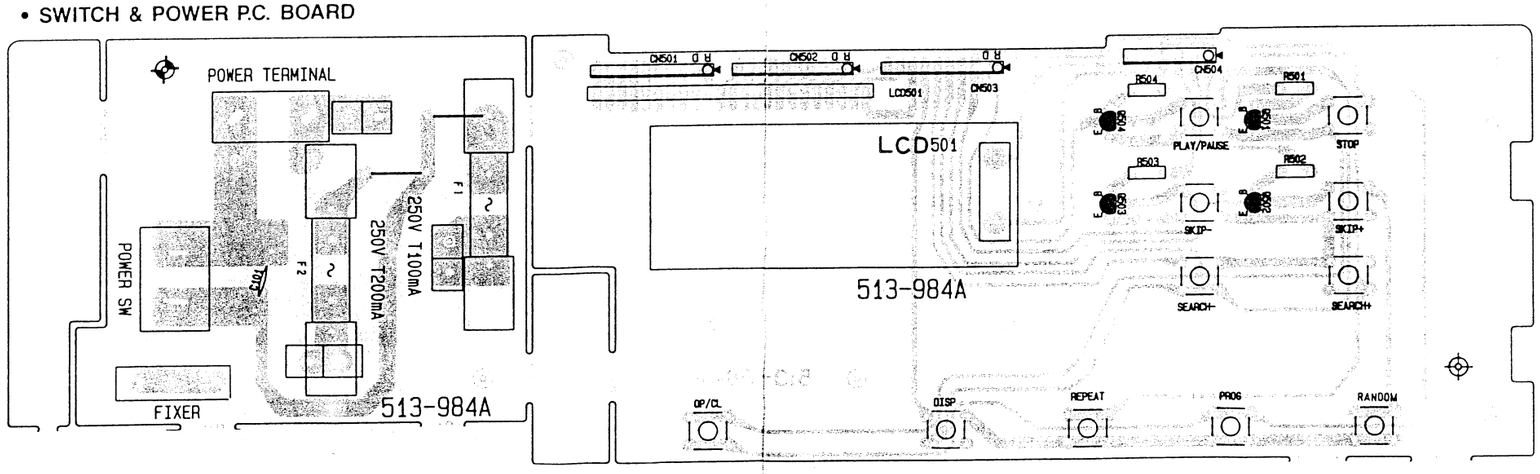
IC303 KIA4558P(op Amp)

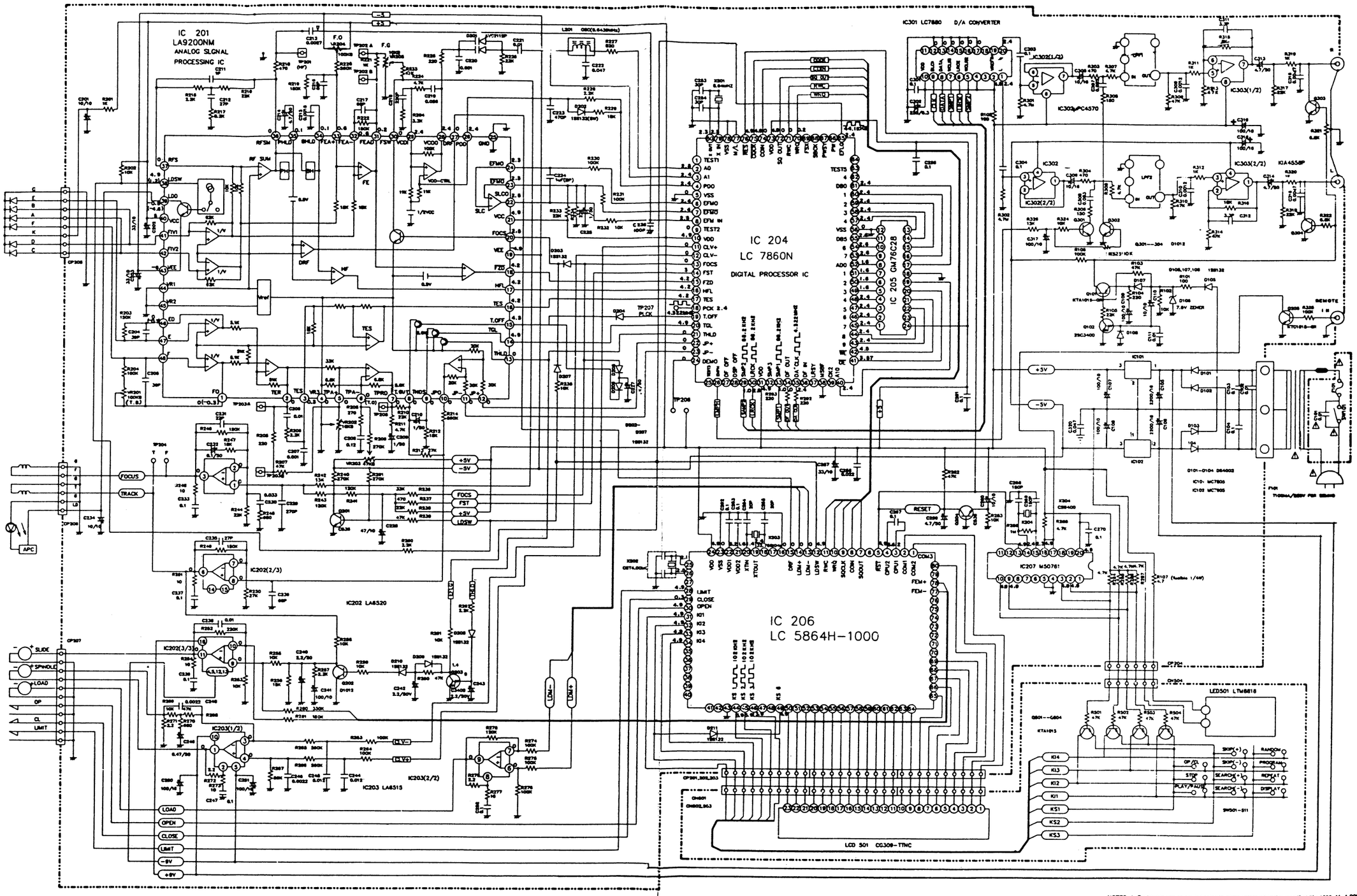


• MAIN P.C. BOARD



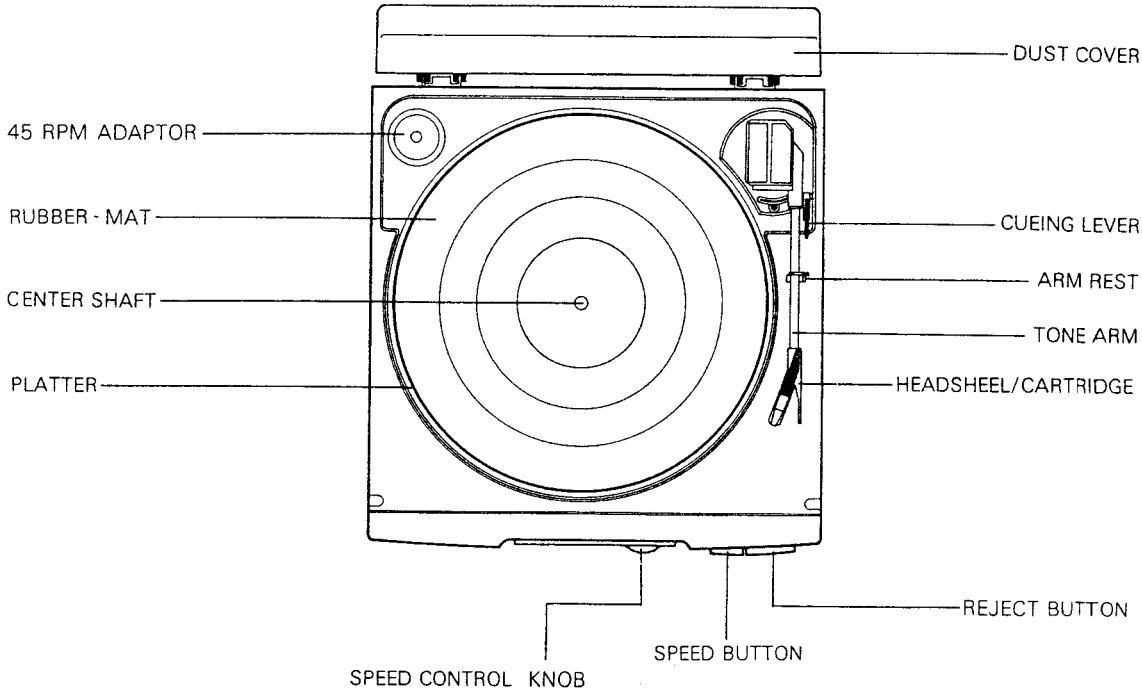
• SWITCH & POWER P.C. BOARD





NOTES: 1. Resistance values are indicated in ohms unless otherwise specified (K = 1000, M = 1,000,000)
2. Capacitance values are shown in microfarads unless otherwise (P = MICRO-MICRO FARADS)

DESIGNATION OF PARTS



ADJUSTMENT

1. Pitch Control Range Adjustment

While observing the illiminated strobe bars, turn the pitch control knob so that the bars for the required speed and the power supply frequency in your country (for Europe 50Hz) for U.S.A 60Hz appear to stand still. Fig. 1.

This adjustment should be done while playing a record.

1) + Direction Control
   When rotation speed is slow, turn the knob to the left.
2) – Direction Control
   When rotation speed is fast, turn the knob to the right.

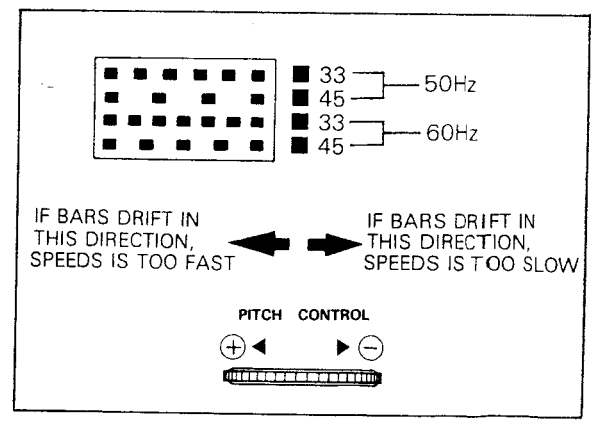


Fig. 1

2. Speed Adjustment

(1) Set Pitch Control knob to its mechanical center.
(2) Select required speed.
(3) Adjust semifix resistor (see Fig. 2) with small minus driver until speed becomes rating
(4) Repeat for second speed.

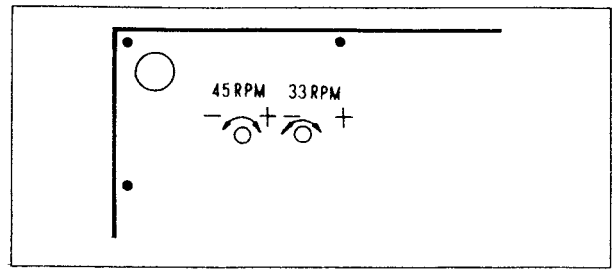


Fig. 2

3. Auto Return-Range Adjustment

(1) If Tone Arm returns to early or does not return at all, open the bottom cover and adjust the autoreturen point as follows.
(2) Lock Tone Arm to the Arm Rest and turn adj screw (Fig. 3.)
A: Clockwise : Autoreturn Point will be later.
B: Counterclockwise : Autoreturn Point will be earlier.

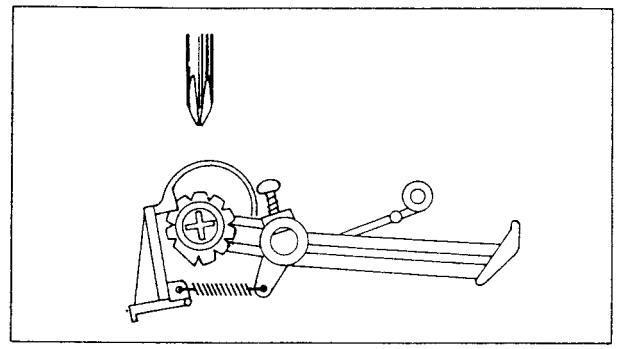


Fig. 3

STYLUS REPLACEMENT

The diamond stylus of the Turntable can normally play for about 300 ~ 1000 hours. However, when the sound becomes distorted or noisty, check the stylus for wear. If worn out, replace.

1. Gently pull out the stylus in the direction of the arrow as shown in the diagram.
2. Attach the new stylus in reverse order.

The worn out stylus will damage the record permanently. It's easier to replace your stylus than to replace record library.

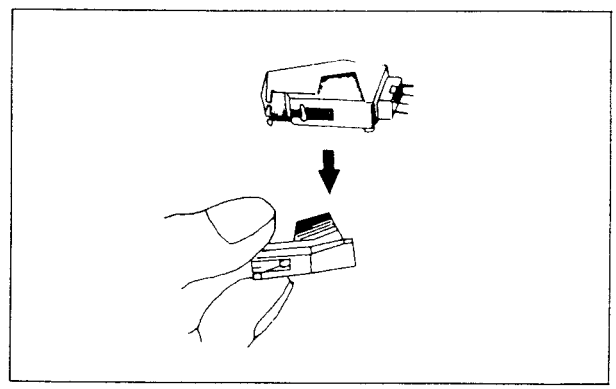


Fig. 4

CARTRIDGE REPLACEMENT

You can replace the cartridge with any Plug-in connector type cartridge "TAP" on the market.

1. Remove the cartridge fixing screw with a small screwdriver (Fig. 5), hold the tone arm and pull out the cartridge gently.
2. Align the pins in the new cartridge with the holes in the tone arm, insert the pins into the holes until they will go no further and then tighten up the screw.

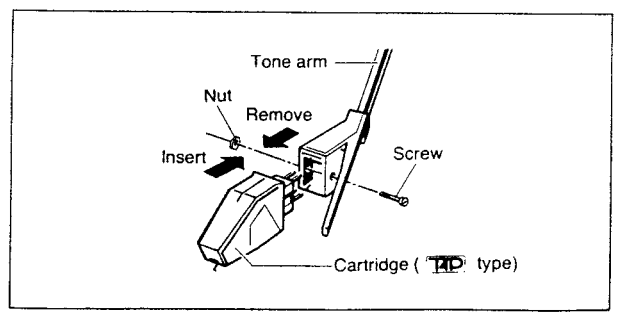
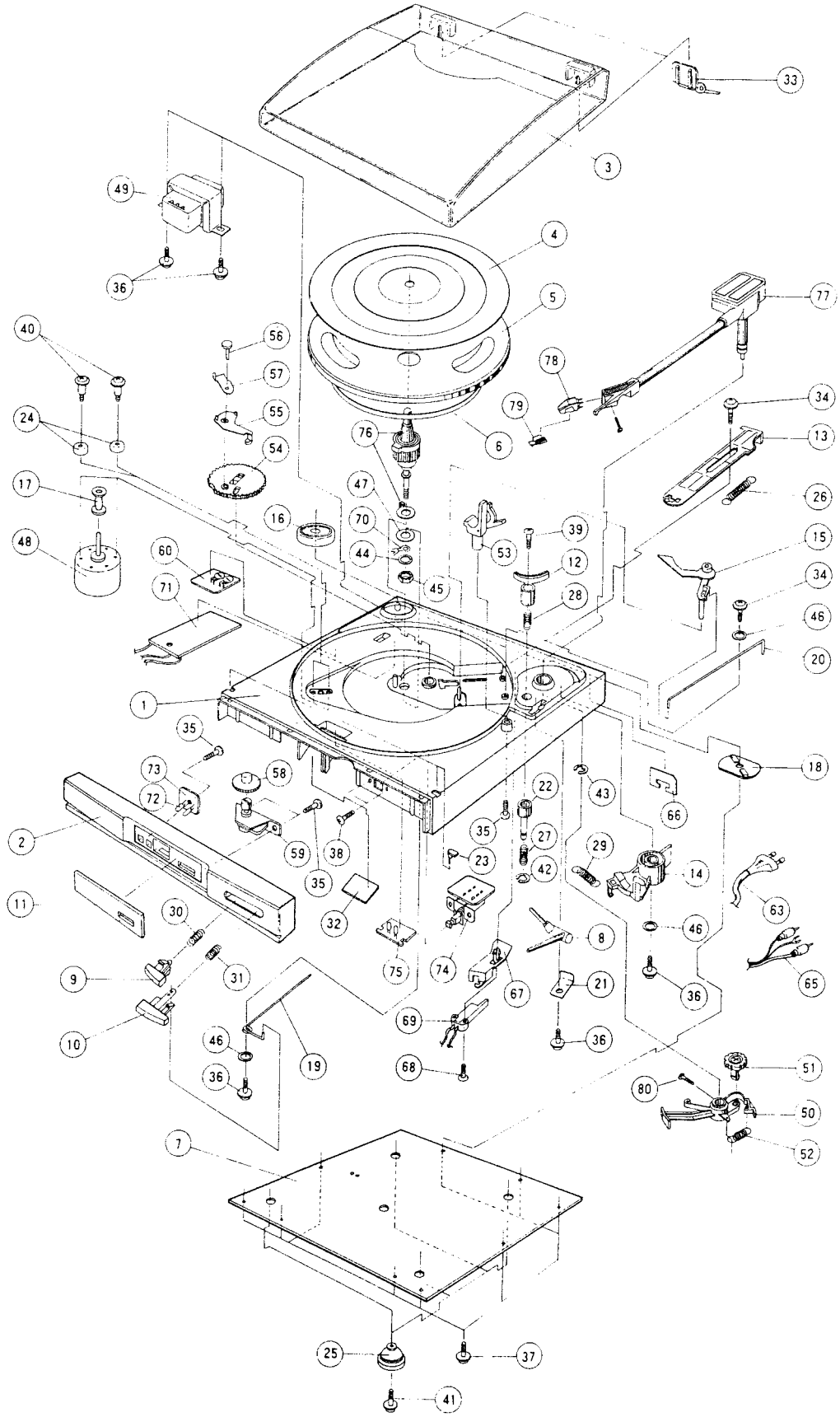
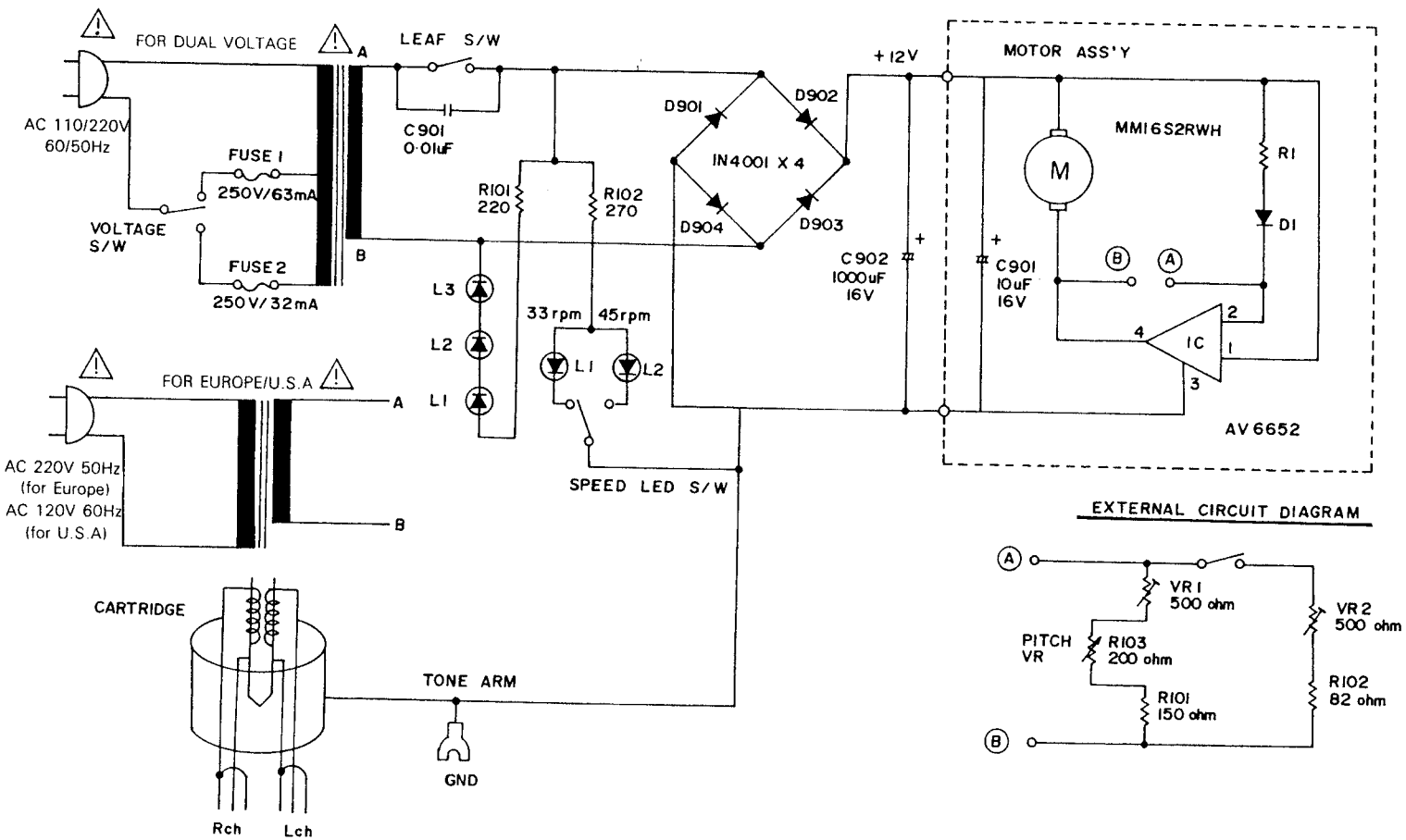


Fig. 5

EXPLODED VIEW




FOR DUAL VOLTAGE
AC 110/220V
60/50Hz
FUSE 1
250V/63mA
VOLTAGE
S/W
FUSE 2
250V/32mA
A
B
LEAF S/W
C901
0·01uF
R101
220
R102
270
D901
D902
IN4001 X 4
D904
D903
+12V
C902
1000uF
16V
MOTOR ASS'Y
MM16S2RWH
M
R1
D1
C901
10uF
16V
IC
AV6652
L3
L2
L1
33rpm
45rpm
L1
L2
SPEED LED S/W
FOR EUROPE/U.S.A
AC 220V 50Hz
(for Europe)
AC 120V 60Hz
(for U.S.A)
CARTRIDGE
TONE ARM
GND
Rch
Lch
EXTERNAL CIRCUIT DIAGRAM
VR1
500 ohm
VR2
500 ohm
PITCH
VR
R103
200 ohm
R101
150 ohm
R102
82 ohm

Quelle INTERNATIONAL

Technischer Kundendienst

Technische Unterlage

037.7192

BESTELL-NR.	0377192
GERAETEBEZEICHNUNG	UNIV.-BAUSTEIN-SET
WARENGATTUNG	653
AUSFUEHRUNGS-NR.	001
GERAETEBESCHREIBUNG	
PRIVILEG	VTCFCD4394
LIEFERANTEN-NR.	201888
PREIS	1598.00
KATALOG	894
GARANTIEZEIT	6
KD-SEKTOR	R
HEIM/BRINGE	WERKSTATT
BETREUUNG	EIGEN
KOSTENTRAEGER	EIGEN
REPARATURFAEHIG	JA

ZEILE	POSITION	SYM	BEZEICHNUNG	ET-NUMMER
1				
2	FUER FB		NF-KABEL 2X3.5 KLINKENST. MONO	947 423 0
3	NF		NF-VERB.KABEL 2X CINCH JE SEITE	997 609 3
4				
5			FERNBEDIENUNG :	
6				
7			FERNBEDIENUNG,GEBER	745 507 4
8	J-1		FB-OBERTEIL	745 499 4
9	J-2		FB-RUECKTEIL	745 500 9
10	J-3		FB-FILTERSCHEIBE	745 501 7
11	J-4		KONTAKTMATTE	745 502 5
12	J-5		BATTERIEKONTAKT A	745 503 3
13	J-6		BATTERIEKONTAKT B	745 504 1
14	J-7		BEDIENPLATTE	745 505 8
15	J-8		BATTERIEFACHDECKEL	745 506 6
16				
17			TUNER :	
18				
19			AM-HILFSANTENNE	743 441 8
20			HALTER FUER AM-ANTENNE	745 509 0
21			HALTEWINKEL FUER PLATTENSPIELER	745 508 2
22	A-1		FRONTBLENDE KPL.	745 490 3
23	A-2		KNOPF,POWER	745 491 1
24	A-3		KNOPFLEISTE 1-10	745 492 9
25	A-4		KNOPF,MEMORY-MONO	745 493 7
26	A-5		SCHEIBE,DISPLAY	745 494 5
27	A-8		KNOPFEINHEIT UP,DOWN,FM-LW	745 495 2
28	B-6		FUSS	745 496 0
29	B-8		FREMDSPANNUNGSBUCHSE,220 V	734 247 0
30	B-10		GEHAEUSE-OBERTEIL	745 497 8
31		A	ANTENNENBUCHSE 75 OHM	953 072 6
32				
33			ELEKTRISCHE TEILE TUNER :	
34				
35			NETZTRAFO	745 488 7
36	FUER FB		CINCHBUCHSENBLOCK 2-FACH	745 489 5
37	FUER LCD		LAMPE 12V/100MA	745 487 9
38	CF101		AM-KERAMIKFILTER SFZ 450F32	733 836 1

Großversandhaus Quelle, Gustav Schickedanz KG. Kundendienstzentralleitung Ulmenstraße 52 Nürnberg
Nachdruck nicht gestattet Änderungen vorbehalten
H/W 89/90 April 90
Bei allen Reparaturen sind die gültigen Sicherheitsvorschriften

ZEILE	POSITION	SYM	BEZEICHNUNG	ET-NUMMER
39	CF102		AM-KERAMIK-FILTER BFU 450C4N	734 270 2
40	CF201-203		FM-KERAMIKFILTER SFE 10.7 MS3	733 843 7
41	CF301		AM-KERAMIK-FILTER CSB 456F11	734 269 4
42	D101...		DIODE 1 S 2472	948 732 3
43	D102...		DIODE 1 SS 132	725 598 7
44	D402,711		ZENERDIODE ZPD 5,1	925 475 6
45	D501		ZENERDIODE RD 10 EB B2	952 236 8
46	D630,631		DIODE 1 N 4002	921 523 7
47	D701-704		DIODE 1 N 4001	176 419 0
48	D708		ZENERDIODE ZPD 6,2	176 820 9
49	D709		ZENERDIODE ZPY 30	952 539 5
50	IC201		IC LA 1266	745 481 2
51	IC301		IC LA 3401	743 287 5
52	IC401,EMPF		IC S6-05	740 691 1
53	IC601		IC UPD 1713 AG-619	745 482 0
54	IC701		IC UPC 78 L 05	950 533 0
55	IC901,GEB.		IC TC 9012 F-021	745 483 8
56	L2		FM-SPULE	734 278 5
57	L3		FM-SPULE	734 275 1
58	L4		FM-SPULE	734 277 7
59	L5		FM-SPULE	734 276 9
60	L6,7		DROSSEL 2.2 UH	953 046 0
61	L102		LW-ANTENNENSPULE	734 271 0
62	L103		MW-ANTENNENSPULE	734 272 8
63	L104		MW-OSZILLATORSPULE	734 274 4
64	L105		LW-OSZILLATORSPULE	734 273 6
65	L302,303		DROSSEL 47UH	733 798 3
66	LCD		DISPLAY LCD 8065 MJP	745 485 3
67	LED901		LEUCHTDIODE KLR 124 E	726 041 7
68	LED902,903		LED,INFRAROT,EL-1L1	740 688 7
69	LPF301,302		LOW-PASS-FILTER	733 844 5
70	Q1-3		TRANSISTOR 3 SK 74 L	733 850 2
71	Q4		TRANSISTOR 2 SC 1923 O	947 094 9
72	Q5...		TRANSISTOR 2 SK 161-GR	986 669 0
73	Q101...		TRANSISTOR 2 SC 1815 GR	947 335 6
74	Q201		TRANSISTOR 2 SC 380	175 437 3
75	Q302...		TRANSISTOR 2 SA 1015	949 017 8
76	Q603,605		TRANSISTOR 2 SK 30 AY	175 984 4
77	Q604,702		TRANSISTOR 2 SC 2240 BL	950 910 0
78	Q608,901		TRANSISTOR 2 SC 1959	949 016 0
79	Q701,703		TRANSISTOR KTD 526 Y	730 982 6
80	RL701		RELAY VS-12MB	745 486 1
81	RL702		RELAY VS-24MB	740 681 2
82	SW601-619		TACTSCHALTER	733 801 5
83	SW701		NETZSCHALTER	745 484 6
84	T1		FM-ZF-FILTER	733 840 3
85	T101		AM-ZF-FILTER	743 299 0
86	T201		FM-ZF-FILTER	743 301 4
87	T202		FM-ZF-FILTER	743 300 6
88	VC1-5		DIODE 1 SV 55	967 225 4
89	VC101-104		CAP-DIODE SVC 333 A	733 832 0
90	X601		QUARZ 4.5000 MHZ	733 845 2
91				
92			<u>VERSTAERKER :</u>	
93				
94	A-1		FRONTBLENDE	745 528 0
95	A-2		KNOPF,POWER	745 491 1
96	A-3		KNOPF,SCHIEBEREGLER	745 529 8
97	A-4		KNOPF,EQ/EIN-AUS	745 538 9
98	A-5		DREHKNOPF,BAL.MIC	745 530 6
99	A-6		KNOPFLEISTE,FUNKTION	745 531 4
100	A-7		KNOPF,MEMORY-MONO	745 493 7
101	A-12		DREHKNOPF,LAUTSTAERKE	745 532 2
102	A-13		ZIERRING,LAUTSTAERKE	745 533 0
103	A-14		KNOPFLEISTE,LOONESS-METER	745 534 8
104	A-15		SCHEIBE,DISPLAY	745 535 5
105	B-4		FUSS	745 496 0
106	B-5		FILZ	745 536 3
107	C-3		FREMDSPANNUNGSBUCHSE,220 V	734 247 0
108	C-12		OBERTEIL	745 537 1
109				
110			<u>ELEKTRISCHE TEILE VERSTAERKER :</u>	
111				
112			NETZTRAFO	745 526 4
113			RELAY VB-12MB	745 524 9
114			RELAY LZ-12H 12V 5A	745 525 6
115	EQ		DRUCKSCHALTER	745 515 7
116	POWER		NETZSCHALTER	742 527 5
117			TAKT-SCHALTER	740 682 0
118	KH,MIC		KLINKENBUCHSE 6.3 MM STEREO	733 882 5
119			CINCHBUCHSE 4-FACH	733 769 4
120			CINCHBUCHSE 2-FACH	743 544 9
121	FB		CINCHBUCHSE 1-FACH	745 516 5
122	VR,MIC		DREHPOTI 2X100KA	745 517 3
123	VR,BAL		DREHPOTI 100KW	745 518 1
124	VR,LAUT		DREHPOTI 2X250KB	745 519 9
125	VR,EQ		SCHIEBEREGLER 2X100K	745 520 7

ZEILE	POSITION	SYM	BEZEICHNUNG	ET-NUMMER
126	C721,722		ELKO 8200 UF/63V	740 656 4
127	D101...		DIODE 1 N 4148	175 540 4
128	D401		LED-SLB15VW3	742 494 8
129	D402		ZENERDIODE GZA 6,2 Y	722 270 6
130	D403...		DIODE 1 SS 132	725 598 7
131	D643		DIODE 1 N 4002	921 523 7
132	D701-704		DIODE P 300 D	745 539 7
133	D705		GLEICHRICHTER WG 005	176 029 7
134	D709		ZENERDIODE RD 10 EB B2	952 236 8
135	D710		ZENERDIODE RD 5,1 EB	952 237 6
136	IC101		IC NJM 4558 D	950 628 8
137	IC102		IC LC 7821	745 498 6
138	IC103		IC LC 4966	741 864 3
139	IC104,201		IC NJM 4558 D	950 628 8
140	IC202,203		IC LC 4966	741 864 3
141	IC204,205		IC M 5227 P	730 051 0
142	IC206		IC LC 4966	741 864 3
143	IC401		IC LC 5814 H-788	746 705 3
144	IC402		IC L 78 LR 05 C-MA	745 512 4
145	IC403		IC S 8052 ALB	745 513 2
146	IC501-503		IC NJM 4558 D	950 628 8
147	IC504		IC LC 7561	743 670 2
148	IC601		IC STK 4191 II	740 692 9
149	IC602		IC UPC 1237 H	745 514 0
150	IC701		IC 7815	957 909 5
151	IC702		IC 7915	957 910 3
152	IC901		IC MC 14013 BCP	740 690 3
153	L1,2		DROSSEL 47UH	733 798 3
154	L601,602		DROSSEL 3.2 UH	745 521 5
155	LCD		DISPLAY LCD 8058 MJP	745 527 2
156	LP701,702		LAMPE 12V/100MA	745 522 3
157	Q101...		TRANSISTOR 2 SC 1815 GR	947 335 6
158	Q241...		TRANSISTOR 2 SA 1015	949 017 8
159	Q242		TRANSISTOR 2 SA 562	926 943 2
160	Q243		TRANSISTOR 2 SC 1959	949 016 0
161	Q611,612		TRANSISTOR 2 SC 2229	951 671 7
162	R621,622		WIDERSTAND 0.22 OHM 3 WATT	733 802 3
163	R649		WIDERSTAND 100.0 OHM 0.50 W SI	730 013 0
164	TH601		THERMISTOR PTH 48	742 498 9
165	XL401		KERAMIKFILTER CSB 400 P	745 523 1
166				
167			DOPPEL TAPE DECK :	
168				
169	A-1-1		CASSETTENFACHDECKEL I LINKS	745 551 2
170	A-1-2		CASSETTENFACH I LINKS	745 552 0
171	A-1-4		FENSTER FUER DECKEL I LINKS	745 553 8
172	A-1-5		CASSETTENANDRUCKFEDER	745 554 6
173	A-2-1		CASSETTENFACHDECKEL II RECHTS	745 555 3
174	A-2-2		CASSETTENFACH II RECHTS	745 556 1
175	A-2-4		FENSTER FUER DECKEL II RECHTS	745 557 9
176	A-2-5		CASSETTENANDRUCKFEDER	745 554 6
177	A-3-1		WIEDERGABECASSETTENLAUFWERK	745 634 6
178	A-4-1		A/W-CASSETTENLAUFWERK	745 629 6
179	A-5		FENSTER DISPLAY	745 558 7
180	A-6		SPIEGEL	745 559 5
181	A-7		FRONTRAHMEN	745 560 3
182	A-8		KNOPFLEISTE,TAPE I	745 561 1
183	A-9		KNOPFLEISTE TAPE II	745 562 9
184	A-10		KNOPF,SCHIEBESCHALTER	745 563 7
185	A-11		KNOPF, EJECT TAPE I	745 564 5
186	A-11-1		SCHAFT FUER KNOPF EJECT I	745 565 2
187	A-12		KNOPF,POWER	745 566 0
188	A-13		KNOPFLEISTE,5-FACH	745 567 8
189	A-14		KNOPFLEISTE,3-FACH	745 568 6
190	A-15		DREHKNOPF	745 569 4
191	A-16		KNOPF,EJECT TAPE II	745 570 2
192	A-16-1		SCHAFT FUER KNOPF EJECT II	745 571 0
193	A-21		HALTER FUER KNOPF EJECT I	745 572 8
194	A-23		SCHAFT FUER NETZSCHALTER	745 573 6
195	A-33		DAEMPFERRAD	745 574 4
196	A-34		FEDER	745 575 1
197	A-35		FEDER	745 576 9
198	A-36		FEDER,AUSWURF	745 577 7
199	A-37		GUMMISTOPPEN,NETZSCHALTER	745 578 5
200	B-1		OBERTEIL	745 579 3
201	B-3		FUSS	745 496 0
202				
203	II,"B"		A/W-CASSETTENLAUFWERK	745 629 6
204				
205	2		FEDER	746 657 6
206	3		ANDRUCKROLLE	746 658 4
207	4		FEDER FUER ANDRUCKROLLE	746 659 2
208	7		LOESCHKOPF	745 630 4

ZEILE	POSITION	SYM	BEZEICHNUNG	ET-NUMMER
209	10		WIEDERGABEKOPF	745 631 2
210	14		KOPFTRAGERPLATTE	746 660 0
211	15		CASS.-FUEHRUNGSTIFT LINKS	746 661 8
212	16		CASS.-FUEHRUNGSTIFT MITTE	746 662 6
213	17		CASS.-FUEHRUNGSTIFT RECHTS	746 663 4
214	21		ABWICKELTELLER	746 664 2
215	22		AUFWICKELTELLER	746 665 9
216	23		FEDER FUER WICKELTELLER	746 684 0
217	24		ZWISCHENRAD	746 666 7
218	34,1		MOTOR MMI 6H2LW	745 632 0
219	34,2		MOTORPULLY	746 667 5
220	35		RIEMEN	745 633 8
221	45		HEBEL	746 668 3
222	46		FEDER	746 669 1
223	50		ARM-PLAY	746 670 9
224	51		ZAHNRAD	746 671 7
225	52		RIEMEN	746 672 5
226	53		HEBEL	746 673 3
227	54		FEDER	746 674 1
228	55		KURVENRAD	746 675 8
229	57		SPULE	745 213 9
230	58		SPULENDORN	746 656 8
231	59,2		RUTSCHKUPPLUNG	746 676 6
232	59,3		HEBEL FUER RUTSCHKUPPLUNG	746 677 4
233	63,2		OPTO-KOPPLER SP/ 31504 BC	746 678 2
234	64		BLATTFEDERSCHALTER	745 197 4
235	65		BLATTFEDERSCHALTER	745 198 2
236	68		SCHWUNGMASSE	746 679 0
237	80		AUSWURFHEBEL	746 680 8
238	81		AUSWURFSPERRE	746 681 6
239	83		FEDER FUER AUSWURFHEBEL	746 682 4
240	84		MAGNET	746 683 2
241	101		BEF.SCHEIBE 2,2X4X0,25	996 279 6
242	F.P.21,22		SICHERUNGSSCHEIBE 2 MM	987 250 8
243				
244	I,"A"		WIEDERGABECASSETTENLAUFWERK	745 634 6
245				
246	1		IC DN 6815 A	746 643 6
247	2		MOTOR MMI 6H2LW, CCW 12V	745 196 6
248	3		BLATTFEDERSCHALTER	745 197 4
249	3		MITNEHMERKAPPE	745 202 2
250	4		BLATTFEDERSCHALTER	745 198 2
251	5		ANTR.EINHEIT	745 199 0
252	6		SCHWUNGRAD A	745 200 6
253	7		ZAHNRAD	745 201 4
254	9		HEBELARM	745 203 0
255	10		GA-ROLLE L	745 204 8
256	11		GA-ROLLE R	745 205 5
257	13		ZWISCHENRAD	746 644 4
258	18		PULLEY	745 215 4
259	19		RIEMEN	745 216 2
260	20		FEDER	746 645 1
261	24		FEDER FUER MITNEHMER	746 646 9
262	30		HEBEL FUER SPULENDORN	746 647 7
263	34		FEDER FUER RECHTE ANDRUCKROLLE	746 648 5
264	35		FEDER FUER LINKE ANDRUCKROLLE	746 649 3
265	46		BANDTELLER R	745 206 3
266	47		BANTELLER L	745 207 1
267	54		SCHWUNGRAD B	745 208 9
268	63		FEDER,CASS.ANDRUCK	745 209 7
269	66		CASS.-FUEHRUNGSTIFT MITTE	746 650 1
270	67		CASS.-FUEHRUNGSTIFT LINKS	746 651 9
271	68		CASS.-FUEHRUNGSTIFT RECHTS	746 652 7
272	69		UMSCHALTRAD	745 210 5
273	72		HEBEL FUER CASS.-SPERRE	746 653 5
274	74		BREMSHEBEL	746 654 3
275	75		AUSWURFHEBEL	746 655 0
276	77		LAGER	745 218 8
277	80		AUSLOESEHEBEL	745 211 3
278	81		SPULENDORN	746 656 8
279	82		SPULE	745 212 1
280	90		SPULE	745 213 9
281	201		SICHERUNGSSCHEIBE 2 MM	987 250 8
282	301		WIEDERGABEKOPFEINHEIT KPL.	745 214 7
283				
284			ELEKTRISCHE TEILE TB :	
285				
286			NETZTRAFO	745 550 4
287	MIC		KLINKENBUCHSE 6.3 MM STEREO	733 882 5
288	KH		KLINKENBUCHSE 6.3 MM STEREO	733 883 3
289	NF		CINCHBUCHSE 4-FACH	733 769 4

ZEILE	POSITION	SYM	BEZEICHNUNG	ET-NUMMER
290	FB		CINCHBUCHSE 1-FACH	745 516 5
291	BD501		GLEICHRICHTER WG 005	176 029 7
292	D101...		DIODE 1 N 4148	175 540 4
293	D620...		DIODE 1 N 4002	921 523 7
294	D681...		DIODE 1 SS 132	725 598 7
295	IC1		IC LA 3246	742 674 5
296	IC3		IC HA 1288 ANT	745 540 5
297	IC4		IC BA 335	953 522 0
298	IC5		IC NJM 4558 D	950 628 8
299	IC6,801		IC BA715	723 192 1
300	IC7		IC L 78 LR 05 C-MA	745 512 4
301	IC10		IC LC 6568 H-4071	745 541 3
302	IC881		IC LC 7583 B	745 542 1
303	L101,201		DROSSEL 33 MH	745 544 7
304	L102,202		FILTER	743 298 2
305	L103,203		DROSSEL 36 MH	745 545 4
306	L401		LOESCHOSZILLATORSPULE	740 795 0
307	L402-453		SPULE	742 961 6
308	L601,602		DROSSEL	733 877 5
309	LA881		LAMPE 12V/100MA	745 522 3
310	LC881		DISPLAY LCD 8053 MJP	745 548 8
311	LD26		LED SLR 54 R	733 810 6
312	LD27		LED SLR 34 URC3	734 280 1
313	LD28,801		LED SLR 54 R	733 810 6
314	SW2-16		TACTSCHALTER	733 801 5
315	SW17-18		SCHIEBESCHALTER	745 547 0
316	SW501		NETZSCHALTER	742 544 0
317	SW801		SCHIEBESCHALTER	745 547 0
318	SW802-806		TACTSCHALTER	733 801 5
319	TR102...		TRANSISTOR 2 SC 1815 GR	947 335 6
320	TR105...		TRANSISTOR 2 SA 1015	949 017 8
321	TR140		TRANSISTOR 2 SC 732	175 850 7
322	TR411...		TRANSISTOR 2 SC 2236	949 043 4
323	TR501...		TRANSISTOR KTD 526 Y	730 982 6
324	TR503		TRANSISTOR KTD 596-0	745 543 9
325	TR616,617		TRANSISTOR 2 SA 966	949 018 6
326	VR1,MIC		DREHPOTI 2X100KA	745 517 3
327	X601		KERAMIKFILTER CST 4.00 MGW	745 549 6
328	ZD101		ZENERDIODE GZA 6,2 Y	722 270 6
329	ZD501-503		ZENERDIODE RD 13 EB	959 478 9
330				
331			CD-PLAYER :	
332				
333	A-1		ZIERRING,FUER FUSS	745 586 8
334	A-2		KNOPFEINHEIT	745 587 6
335	B-2		OBERTEIL	745 588 4
336	B-6		STANGE,NETZSCHALTER	745 589 2
337	B-7		GUMMIMUFFE,NETZSCHALTER	745 590 0
338	B-9		FILZ	745 536 3
339	I-1		FRONTBLENDE	745 593 4
340	J-1		KNOPF,NETZSCHALTER	745 594 2
341	K-1		SCHEIBE,DISPLAY	745 595 9
342	L-1		BLENDE FUER SCHLITTEN	745 596 7
343	M-1		FILZ	745 597 5
344				
345			CD-MECHANIK :	
346				
347			CD-LAUFWERK KPL.	745 591 8
348	C-8-2		SCHLITTEN FUER LASERKOPF	746 340 9
349	C-8-3		SCHLITTEN	746 341 7
350	C-8-4		PLATTENWIPPE	746 342 5
351	C-8-5		HEBEL FUER WIPPE	734 021 9
352	C-8-6		HEBEL	734 022 7
353	C-8-7		ARM	746 343 3
354	C-8-8		TELLER,OBEN	734 024 3
355	C-8-9		KURVENRAD	746 344 1
356	C-8-10		ZAHNRAD	746 345 8
357	C-8-11		ZAHNRAD	746 346 6
358	C-8-12		ZAHNRAD	746 347 4
359	C-8-13		UZAHNRAD	746 348 2
360	C-8-14		MOTORZAHNRAD	746 349 0
361	C-8-15		ACHSE FUER SCHLITTEN	734 028 4
362	C-8-16		MOTOR,PLATTE	743 451 7
363	C-8-17		MOTOR,SCHLITTEN	743 452 5
364	C-8-18		TELLER	746 350 8
365	C-8-20		MIKROSCHALTER	733 984 9
366	C-8-21		ROLLE	996 888 4
367	C-8-22		LASERABTASTEINHEIT MLP-9	743 996 1
368	C-8-26		GUMMI FUER WIPPE	734 031 8
369	C-8-27		RIEMEN	733 982 3
370	C-8-28		MOTORPULLY	733 976 5
371	C-8-32		FEDER	733 980 7
372				

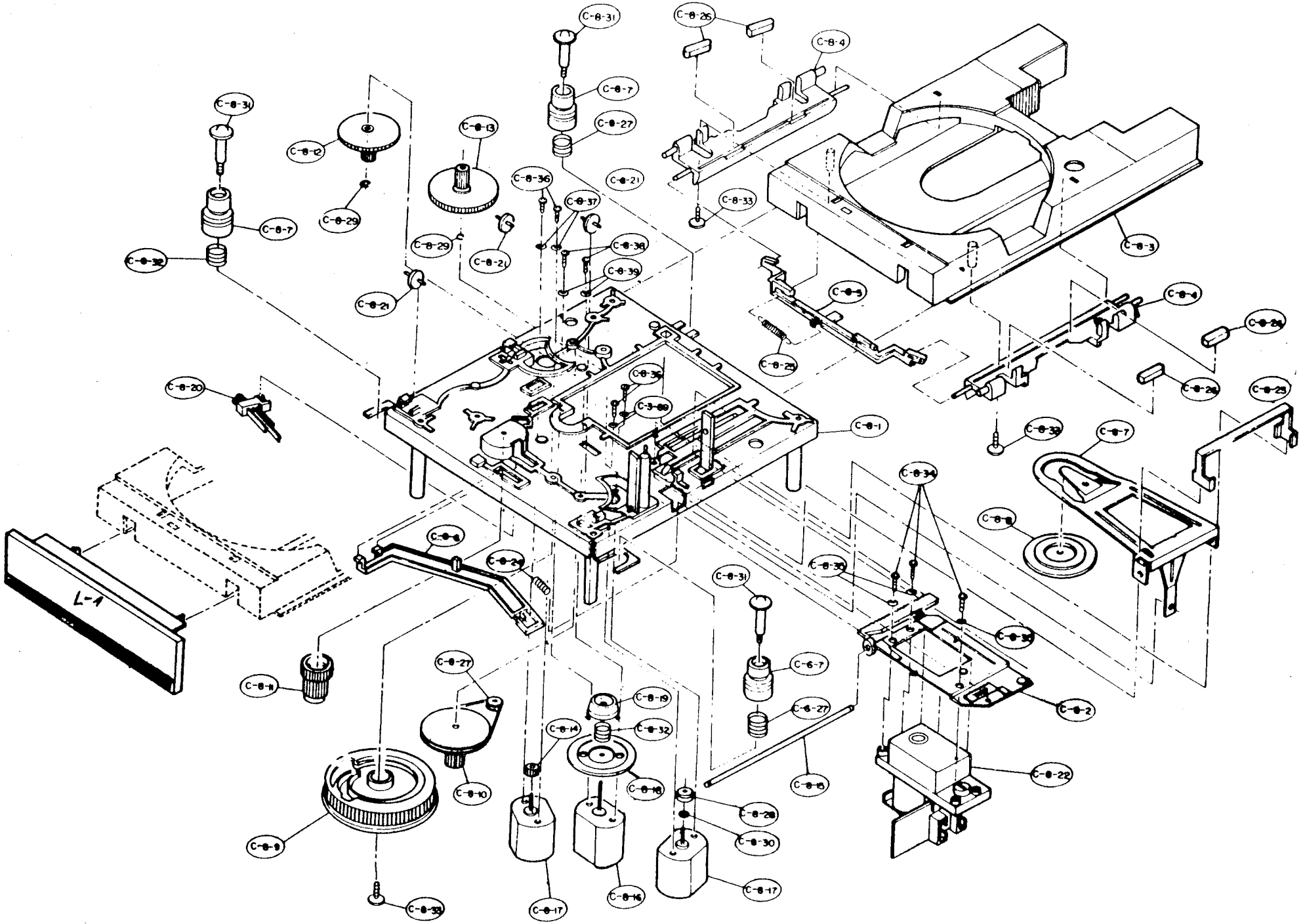
ELEKTRISCHE TEILE CD :

		NETZTRAFO	745 592 6
	D101-104	DIODE 1 N 4002	921 523 7
	D105,7,8	DIODE 1 SS 132	725 598 7
	D106	Z-DIODE RD 7,5 EB1	965 958 2
	C8-7	ARM	746 343 3
	D201	DIODE 1 SV 55	967 225 4
	D202-211	DIODE 1 SS 132	725 598 7
	IC101	IC 7805 U	929 535 3
	IC102	IC 7905	954 475 0
	IC201	IC LA 9200 NM	743 142 2
	IC202	IC LA 6520	745 580 1
	IC203	IC LA 6515	745 581 9
	IC204	IC LC 7860N	743 145 5
	IC205	IC GM 76 C 28-10	743 290 9
	IC206	IC LC 5864 H-1000	745 511 6
	IC207	IC L 78 LR 05 C-MA	745 512 4
	IC301	IC LC 7880	742 400 5
	IC302	IC NJM 2068 SD	740 010 4
	IC303	IC NJM 4558 D	950 628 8
	J301,NF	CINCHBUCHSE	745 583 5
	J302,FB	CINCHBUCHSE 1-FACH	745 516 5
	L201	OSZILLATORSPULE	745 546 2
	LED501	DISPLAY LTM-8818	745 585 0
	LPF1,2	FILTER	745 584 3
	Q101	TRANSISTOR 2 SA 1015	949 017 8
	Q102,203	TRANSISTOR 2 SC 3400	720 314 4
	Q201,204	TRANSISTOR 2 SC 536 F	966 545 6
	Q202	TRANSISTOR 2 SD 1012	732 617 6
	Q205	TRANSISTOR 2 SC 1815 GR	947 335 6
	Q301-304	TRANSISTOR 2 SD 1012	732 617 6
	Q501-504	TRANSISTOR 2 SA 1015	949 017 8
	SW101	NETZSCHALTER	742 544 0
	SW501-511	TAKT-SCHALTER ERSETZT ET-NR. 733 985 6	740 682 0
	X201	QUARZ 8.6436 MHZ	996 919 7
	X202	KERAMIKFILTER CST 4.00 MGW	745 549 6
	X203	QUARZ 3.2768 MHZ	949 287 7
	X204	KERAMIKFILTER CSB 400 P	745 523 1

PLATTENSPIELER :

78		MAGNET-SYSTEM T4P	733 020 2
79		NADELTRAEGER DIAMANT T4P	733 021 0
		HALTEWINKEL FUER PLATTENSPIELER	745 508 2
1		ZARGE	745 453 1
2		FRONTBLENDE	745 454 9
3		ABDECKHAUBE	745 455 6
4		TELLER-BELAG	745 456 4
5		PLATTENTELLER	733 941 9
6		RIEMEN	733 942 7
7		BODEN	745 457 2
8		LIFTHEBEL	745 458 0
9		KNOPF,33/45	745 459 8
10		KNOPF,REJECT	745 460 6
11		LED-ABDECKUNG	745 461 4
12		LIFTARM	745 462 2
13		SCHIEBER	745 463 0
14		SCHALTHEBEL	745 464 8
15		HEBEL	745 465 5
16		PUCK REDUZIERST	177 551 9
17		MOTORPULLY	745 466 3
19		SCHALTSTANGE REJECT	745 467 1
20		STANGE REJECT	745 468 9
25		FUSS	745 469 7
33		SCHARNIER	740 047 6
48		MOTOR MMI-6S2 RWH	743 456 6
49		NETZTRAFO	745 470 5
50		ABSCHALTHEBEL	745 471 3
51		JUSTIERSCHRAUBE	745 472 1
53		TONARMSTUETZE	745 473 9
54		KURVENRAD	745 474 7
58		KNOPF,33/45	745 476 2
69		MIKRO-SCHALTER	743 454 1
74		SCHALTER,33/45	745 477 0
76		TELLERACHSE	745 478 8
77		TONARM	745 479 6
		NETZTRAFO	745 470 5
	D901-904	DIODE 1 N 4001	176 419 0
	33/45	LED DL-1LR	733 923 7
	STROBOSKOP	LED SLH 56 DT3	745 475 4
	R103	DREHPOTI 200 OHM	745 480 4

ENDE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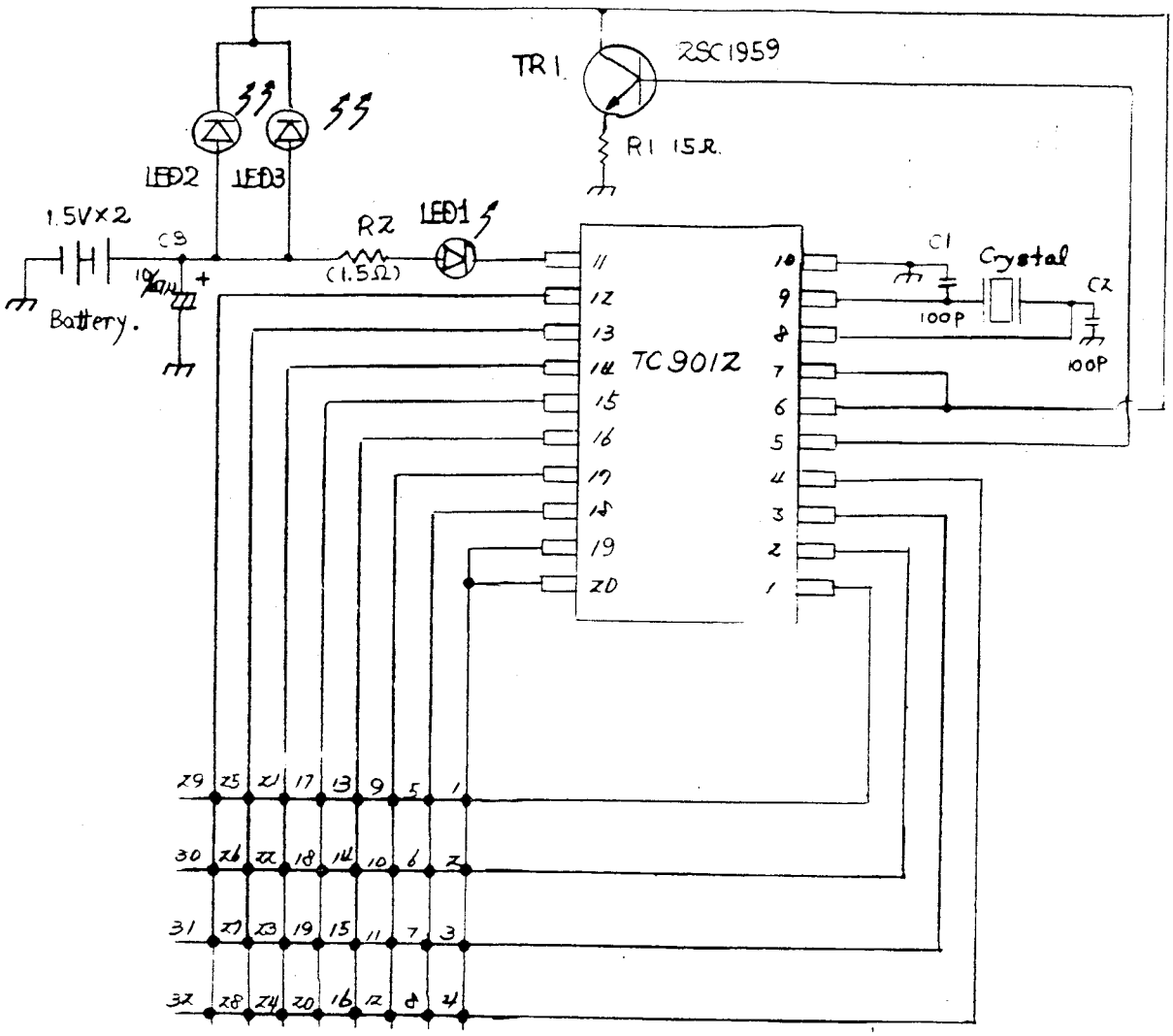
L-1



Key Board
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1) FM

2) MW

3) LW

4) CD

5) CD-PLAY/PAUSE

6) CD-STOP

7) CD ⏮ SKIP

8) CD ⏭ SKIP

9) TAPE

10) AUX

11)VCR

12) PHONO

13)RVS PLAY

14) FWD PLAY

15)STOP

16) NO USE

17)REW

18) F. FWD

19)PRESET ◁

20) PRESET ▷

21)PAUSE-DECK

22) REC

23)VOLUME <

24) VOLUME >

25)NO USE

26) NO USE

27)TUNING ◁

28) TUNING ▷

29)I DECK (4SEC)

30) NO USE

31)POWER ON/OFF

32) MUTE ON/OFF